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HAWAII INST OF GEOPHYSICS HONOLULU

F/G 8/7

SEDIMENT CORE DESCRIPTIONS: R/V KANA KEOKI 1975 AND 1976 NORTH --ETC(U)

FEB 79 F THEYER, C MATO

N00014-75-C-0209

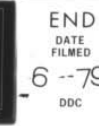
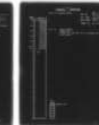
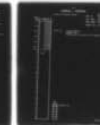
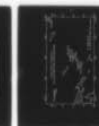
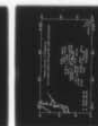
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SEDIMENT CORE DESCRIPTIONS: R/V KANA KEOKI
 1975 and 1976 NORTH CENTRAL PACIFIC CRUISES AND
 1976 SOUTH CENTRAL PACIFIC AND CLARION FRACTURE ZONE CRUISES

by

Staff of the Sediment Core Laboratory

of the

Hawaii Institute of Geophysics

Fritz Theyer, Curator
 Chris Mato, Technical Supervisor

February 1979

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Charles E. Heisley
 Charles E. Heisley
 Director,
 Hawaii Institute of Geophysics

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INTRODUCTION

This report presents generalized descriptions of deep-sea sediment cores collected by personnel of the Hawaii Institute of Geophysics (HIG) during the R/V Kana Keoki's cruises of 1975 and 1976 in the North Central Pacific, and the 1976 cruise in the South Central Pacific, and a 1976 IPOD-site survey conducted on the Clarion Fracture Zone. The locations of the cores are shown in Figures 1 and 2. Table 1 lists the cores, stations and corrected satellite-navigation coordinates, as well as water depth (corrected m), length of core, and (where possible) geological age of the oldest sediments recovered at each location. In general, ages are based on radiolarians and planktonic foraminifera; they are designated in the listing as follows: Q (=Quaternary), TP (=Pliocene), TM (=Miocene), TO (=Oligocene), TE (=Eocene), K (=Cretaceous). Where possible, the foraminiferal zones of Blow (1969) are indicated; uncertain age determinations are shown by a question mark. Table 1 is followed by descriptions of the structural and lithologic sequences, and sedimentary components encountered in each core (the latter determined by microscopic examination of smear slides). The sedimentary nomenclature used is that established by JOIDES for the Deep Sea Drilling Project.

Cores are labeled according to ship (cruise) name, year, gear type, and core number. For example, KK75 PC 11 indicates R/V Kana Keoki cruise 1975, Piston Core #11. The station number appears in the heading of the descriptions to further identify each core. Another gear type used is the free fall cores (FFC). PCOD refers to a piston core obtained with a core orienting device(COD), which is described by Seyb et al. (1977).

The standard procedures used during the preliminary core analyses at HIG are given by Andrews et al. (1970). The cores are initially cut into 150-cm-long sections on board the ship and stored at 2°-4° C. In the laboratory, the sections are then split into "working" and "archive" halves. The working half is routinely sampled in the following sequences:

- 1) Paleomagnetism (10-cm intervals)
- 2) Porosity (50-cm intervals)
- 3) Micropaleontological dating (top and bottom of core, 50-cm intervals)

The archive half is reserved for non-destructive analyses. Smear slides are routinely taken at 50-cm intervals. To allow a finer definition of specific lithologic contacts, smear slides are also taken immediately above and below boundaries as well as within the boundary layer. A visual description of the archive halves, which includes diagrams of sedimentary structures and boundaries, color variations (Munsell color code), and textural variations, completes the preliminary analyses.

79 04 20 005

Both the working and archive halves are stored in an airtight plastic sleeve and a protective plastic "D" tube. The archive half is maintained in cold storage at 2°-4° C; the working half is kept in dry storage at room temperature.

These initial descriptions serve as a guide to samples available through the Sediment Core Analysis Laboratory of the Hawaii Institute of Geophysics. A supplement to these are presented by Andrews et al. (1970, 1973, 1975) and Theyer et al. (1977) for the Solomon Islands 1968-1969 and Murray Fracture Zone 1967 cruises, Western Pacific 1970 cruise, Eastern and Western Pacific 1971 and 1972 cruises, North Central and Southeastern Pacific 1973 and 1974 cruises, and a Mid-Atlantic Ridge 1974 cruise. A sample request form is included (p. 4) in this report. Requests should be directed to:

Chris Mato
University of Hawaii
Hawaii Institute of Geophysics room 216
2525 Correa Road
Honolulu, Hawaii 96822 Telephone: (808) 948-6605

CORE LAB STAFF

Fritz Theyer, Curator

Chris Mato, Technical Supervisor

Patrick Lineberger, Technician

ACKNOWLEDGMENTS

The core laboratory analysis was supported by the National Science Foundation Grant OCE77-20050 and the Office of Naval Research. Coring retrieval operations were supported by the National Science Foundation Grants OCE76-02187 (South Central Pacific Ocean) and CU-Hawaii 25906A2 (IPOD site-surveys) and the Office of Naval Research (North Central Pacific Ocean). Additional support was provided by the Hawaii Institute of Geophysics.

REFERENCES

- Andrews, J. E. et al. (1970) Sediment Core Descriptions: Solomon Islands 1968-1969, and Murray Fracture Zone, 1967. HIG-20-25, Data Report No. 16, Hawaii Institute of Geophysics.
- Andrews, J. E. et al. (1973) Sediment Core Descriptions: R/V Mahi 1970 Cruise, Western Pacific. HIG-73-7. Data Report No. 24, Hawaii Institute of Geophysics.
- Andrews, J. E. et al. (1975) Sediment Core Descriptions: R/V Kana Keoki 1972 Cruise, Eastern and Western Pacific Ocean. HIG-76-13, Data Report No. 32, Hawaii Institute of Geophysics.
- Blow, W. H. (1969) Late Middle Eocene to Recent Planktonic Biostratigraphy. Proceedings of the First International Conference on Planktonic Microfossils, Vol. 1, E. J. Brill, Leiden, Netherlands.
- Seyb, S., Hammond, S. R., and Gilliard, T. (1977) A new device for measuring the behavior of a piston corer. Deep-Sea Res., vol. 24, p. 943-949.
- Theyer, F. et al. (1977) Sediment Core Descriptions: R/V Kana Keoki 1973 North Central Pacific Cruise, 1974 Southeastern Pacific Cruise, and a 1974 Mid-Atlantic Ridge IPOD Site Survey. HIG-77-9, Data Report No. 33, Hawaii Institute of Geophysics.

University of Hawaii at Manoa

Hawaii Institute of Geophysics
2525 Correa Road • Honolulu, Hawaii 96822
Cable Address: UNIHAW

SAMPLE REQUEST

NAME _____ DATE _____

ADDRESS _____

INSTITUTE OR COMPANY AFFILIATION _____

PURPOSE OF SAMPLING* _____

GEOGRAPHIC AREA OF INTEREST _____

PROPOSED ANALYSIS

<u>CRUISE</u> <u>NO.</u>	<u>CORE ID OR</u> <u>DREDGE NO.</u>	<u>SAMPLE DEPTH</u> <u>IN CORE</u>	<u>SAMPLE</u> <u>SIZE</u>	<u>COMMENTS</u>
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*PLEASE SEND THE CORE LAB AN ABSTRACT OR PREPRINT OF THE RESULTS
OBTAINED FROM THESE SAMPLES

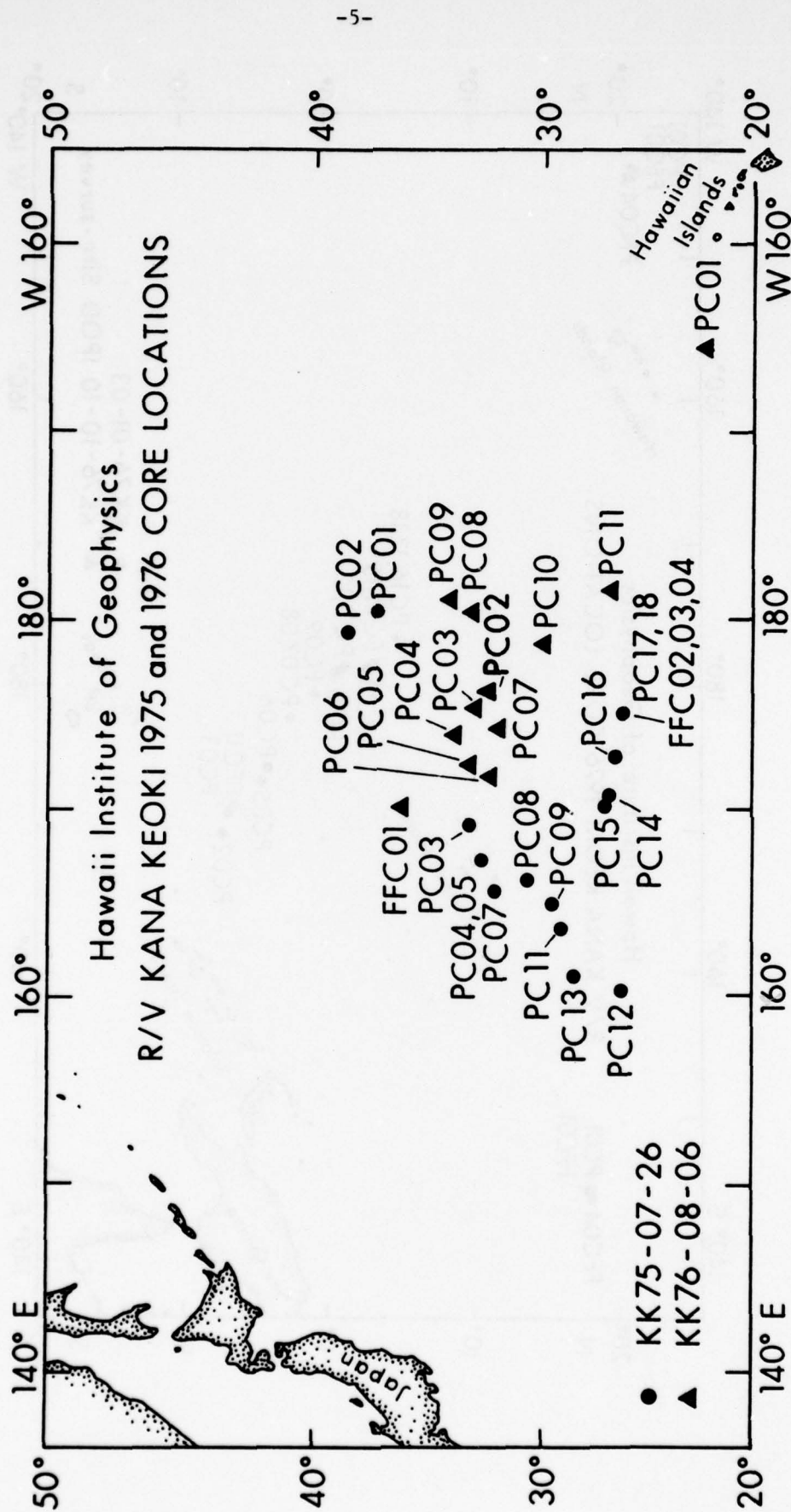


Fig. 1. Core locations, North Central Pacific Ocean.

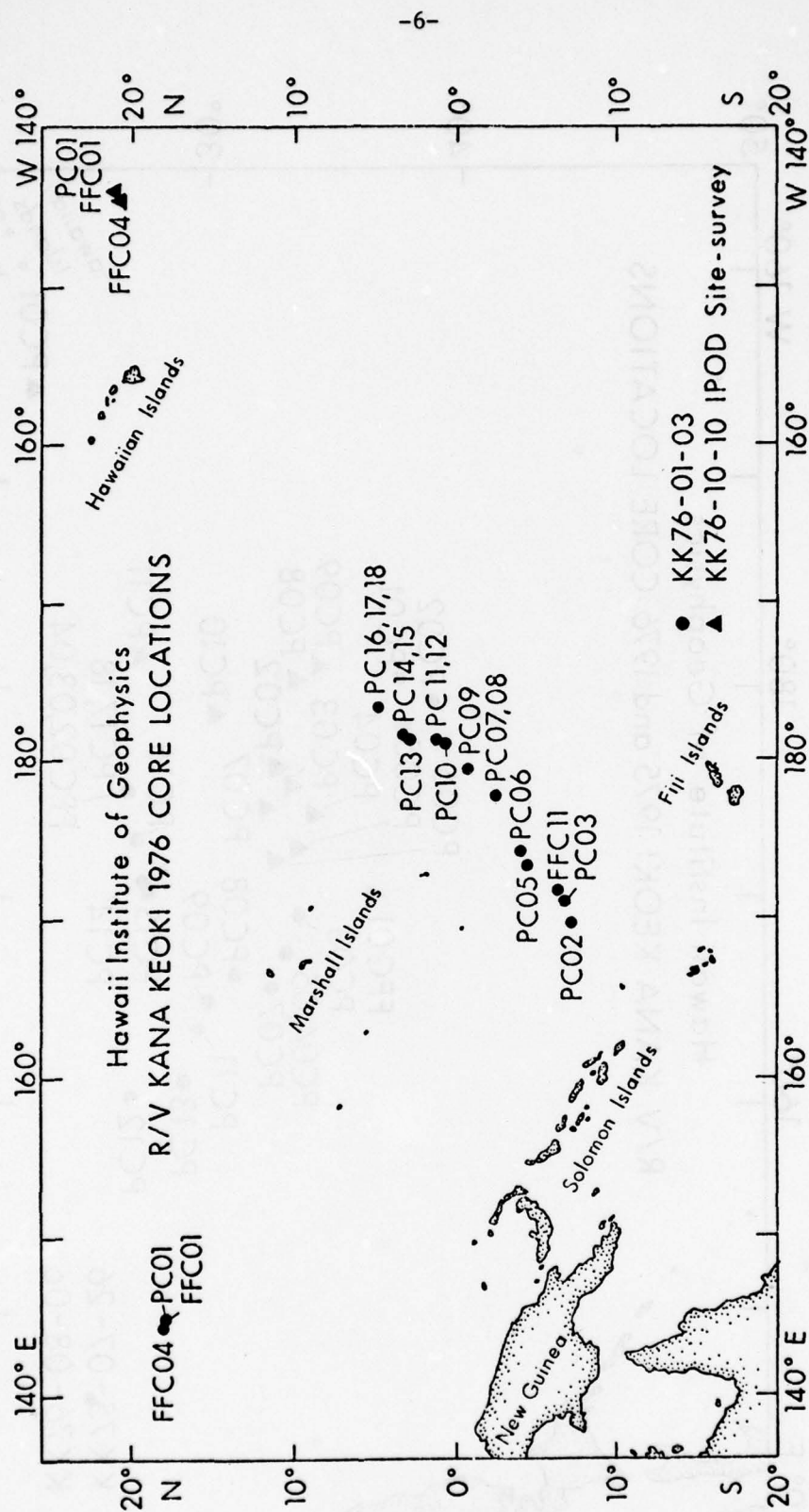


Fig. 2. Core locations, South Central Pacific Ocean.

TABLE 1
Chronological Listing of Cores Obtained During R/V KANA KEOKI 1975 Cruise (KK75-07-26)

CORE TYPE #	STA #	DEPTH (M)	LENGTH (M)	AGE	LOCATION		DATE	TIME	PAGE
PCOD-001	1	5426	17.33	TP	37:22.4 N	179:36.1 W	1975 AUG. 5	16: 5	A-1
PCOD-002	2	5497	17.09	Q	38:37.4 N	179:19.7 E	1975 AUG. 6	7:41	A-3
PCOD-003	3	5736	16.98	Q	33:21.8 N	169: 5.4 E	1975 AUG.12	8:38	A-5
PCOD-004	4	5946	11.57	UNDET	32:49.8 N	167:13.7 E	1975 AUG.13	4: 9	A-7
PCOD-005	5	5911	02.15	UNDET	32:50.5 N	167:12.4 E	1975 AUG.13	9:44	A-8
PCOD-007	7	6130	11.47	UNDET	32: 7.7 N	165:31.7 E	1975 AUG.14	11:16	A-9
PCOD-008	8	6035	12.28	UNDET	30:36.9 N	166: 4.5 E	1975 AUG.15	8:44	A-10
PCOD-009	9	5820	02.49	UNDET	29:28.3 N	164:52.1 E	1975 AUG.16	3:49	A-11
PCOD-011	11	5940	09.88	UNDET	29: 4.4 N	163:33.0 E	1975 AUG.17	8:51	A-12
PCOD-012	12	5959	11.92	UNDET	26:16.4 N	160:16.0 E	1975 AUG.19	4:55	A-13
PCOD-013	13	5645	16.49	UNDET	28:33.3 N	161: 5.2 E	1975 AUG.19	23:52	A-14
PCOD-014	14	5937	14.97	UNDET	26:56.8 N	170:37.3 E	1975 AUG.22	6:50	A-15
PCOD-015	15	5881	11.96	UNDET	27: 3.4 N	170: 1.8 E	1975 AUG.22	13:36	A-16
PCOD-016	16	5929	15.72	UNDET	26:37.5 N	172:45.3 E	1975 AUG.23	9:18	A-17
PCOD-017	17	5905	11.27	K?	26:18.2 N	175: 2.6 E	1975 AUG.24	0:31	A-18
PCOD-018	18	5909	11.66	K?	26:17.9 N	175: 5.7 E	1975 AUG.24	7:43	A-19
FFC-002	19	5908	01.10	UNDET	26:17.8 N	175: 6.0 E	1975 AUG.24	10:14	A-20
FFC-003	19	5908	01.12	Q	26:17.9 N	175: 6.0 E	1975 AUG.24	10:19	A-21
FFC-004	19	5908	01.11	UNDET	26:17.9 N	175: 6.1 E	1975 AUG.24	10:24	A-22

TABLE 2
Chronological Listing of Cores Obtained During R/V KANA KEOKI 1976 Cruise (KK76-01-03)

CORE TYPE #	STA #	DEPTH (M)	LENGTH (M)	AGE	LAT	LOCATION	LONG	DATE	TIME	PAGE
FFC-003	12	3381	01.00	TP	17:48.8 N	144:56.5 E		1976 MAR. 3	12:44	A-23
PCOD-001	12	3326	03.91	Q	17:48.4 N	144:53.1 E		1976 MAR. 3	14:20	A-24
FFC-004	15	4363	00.95	Q	17:53.4 N	144:20.2 E		1976 MAR. 4	10:34	A-25
PCOD-002	3	4750	08.14	Q	7:39.1 S	169:43.1 E		1976 APR. 4	11:34	A-26
PCOD-003	4	5017	16.00	UNDET	7: 7.1 S	170:57.9 E		1976 APR. 5	0: 3	A-27
FFC-011	5	5291	01.22	UNDET	6:44.8 S	171:45.8 E		1976 APR. 5	9:59	A-28
PCOD-005	6	4716	11.09	MTM	4:43.9 S	173:25.7 E		1976 APR. 7	1:50	A-29
PCOD-006	7	5182	11.83	TE?	4:26.3 S	174: 5.8 E		1976 APR. 7	9:58	A-30
PCOD-007	8	5317	11.79	UTM	2:45.4 S	177:53.5 E		1976 APR. 8	12:58	A-31
PCOD-008	8	5314	10.67	UTM	2:45.1 S	177:51.5 E		1976 APR. 8	16:17	A-32
PCOD-009	10	5391	11.89	TP	1: 6.0 S	179:29.3 E		1976 APR. 9	7:31	A-33
PCOD-010	11	5387	11.09	TP	0:23.8 N	178:57.8 W		1976 APR. 9	22:22	A-34
PCOD-011	12	5219	11.71	MTM	0:56.1 N	178:40.5 W		1976 APR. 10	5:41	A-35
PCOD-012	12	5203	06.21	TP	0:55.9 N	178:41.6 W		1976 APR. 10	8:27	A-36
PCOD-013	13	5419	11.17	TP	2:40.1 N	178:45.1 W		1976 APR. 10	22:42	A-37
PCOD-014	14	5290	11.32	MTM	2:54.7 N	178:30.8 W		1976 APR. 11	4: 1	A-38
PCOD-015	15	5412	17.98	Q	2:56.4 N	178:32.1 W		1976 APR. 11	7:40	A-39
PCOD-016	16	5197	17.06	ETM	4:33.7 N	176:33.1 W		1976 APR. 12	9:43	A-40
PCOD-017	16	5240	17.04	MTM	4:34.4 N	176:33.3 W		1976 APR. 12	13:23	A-41
PCOD-018	16	5151	17.18	UTM	4:35.0 N	176:37.1 W		1976 APR. 12	16:23	A-42

TABLE 3
Chronological Listing of Cores Obtained During R/V KANA KEOKI 1976 Cruise (KK76-08-06)

CORE TYPE #	STA #	DEPTH (M)	LENGTH (M)	AGE	LAT	LONG	DATE	TIME	PAGE
PCOD-001	1	4641	10.84	Q(N22)	22:22.3 N	165:30.9 W	1976 AUG. 9	3: 6	A-43
PCOD-002	8	5207	11.60	MTM	32:30.9 N	175:51.4 E	1976 AUG.18	7: 5	A-45
PCOD-003	9	4187	13.56	TP	33:15.6 N	175:16.0 E	1976 AUG.18	17:29	A-46
PCOD-004	10	3998	3.88	TP(N21)	33:55.5 N	173:59.8 E	1976 AUG.22	9:41	A-48
PCOD-005	11	5019	16.37	Q?	33:24.9 N	172:26.0 E	1976 AUG.23	4:55	A-49
PCOD-006	12	5302	13.33	MTM?	32:28.3 N	171:40.7 E	1976 AUG.25	1:48	A-51
PCOD-007	13	5404	4.23	UNDET	32:12.7 N	174:17.2 E	1976 AUG.25	23:59	A-53
PCOD-008	14	4826	5.70	K	33:20.9 N	179:32.3 W	1976 AUG.27	12:26	A-54
PCOD-009	15	4006	7.60	UNDET	34:22.9 N	178:58.1 W	1976 AUG.28	1:37	A-55
PCOD-010	16	4618	1.67	UNDET	30: 3.1 N	178:45.4 E	1976 AUG.30	6:57	A-58
PCOD-011	19	5190	13.25	UNDET	26:52.5 N	178:26.4 W	1976 SEP. 2	7:15	A-59
FFC-001	29	5074	01.08	Q	36:10.5 N	170: 2.0 E	1976 SEP.21	21:21	A-60

TABLE 4
Chronological Listing of Cores Obtained During R/V KANA KEOKI 1976 Cruise (KK76-10-10)

CORE TYPE #	STA #	DEPTH (M)	LENGTH (M)	AGE	LOCATION		DATE	TIME	PAGE
FFC-001	1	5571	1.07	UNDET	20:19.3 N	144:36.9 W	1976 OCT.20	15:15	A-61
PCOD-001	1	5541	6.42	UNDET	20:19.5 N	144:37.9 W	1976 OCT.20	18:16	A-62
FFC-004	2	5576	1.18	UNDET	20:30.8 N	144:28.2 W	1976 OCT.22	10:48	A-63

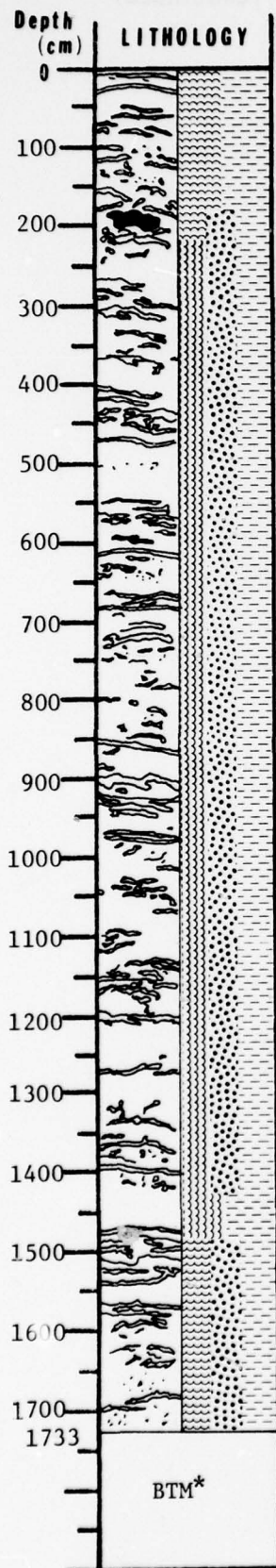
APPENDIX

Core Descriptions

A-1
LITHOLOGIC DESCRIPTION

Northeast Hess Rise

KK75 Sta. 01
Core ID PCOD 01
Lat., Long. 37° 22.40' N
179° 36.14' W
Water Depth 5426 m
Logged By Au & Mato



0-170 cm	yellowish brown (10YR5.5/4) to dark brown (10YR3/3) MINERAL-RAD BEARING DIATOM RICH CLAY 56-72% clay, 14-25% diatom, 5-10% rad, 5-10% aniso min, 0-5% iso min, 0-1% ash, 0-1% silicoflag
170-233 cm	brown (10YR5.5/3) RAD BEARING DIATOM-MINERAL RICH CLAY 46% clay, 15-25% aniso min, 15-25% diatom, 7-10% rad, 2-3% quartz, 0-3% volcanic glass, 1-2% silicoflag
233-532 cm	light yellowish brown (10YR6/4) to very dark grayish brown (10YR3/2) RAD-DIATOM RICH MINERAL CLAY 28-34% clay, 20-30% aniso min, 13-20% diatom, 15-17% rad, 5% sponge, 0-5% quartz, 0-3% silicoflag, 0-5% opaque min
532-1414 cm	light yellowish brown (10YR6/4) to dark grayish brown (10YR4/2) RAD-DIATOM-MINERAL RICH CLAY 25-52% clay, 13-25% aniso min, 12-25% diatom, 15-20% rad, 2-5% sponge, 0-8% silicoflag, tr-7% opaque min, tr-5% quartz
1414-1472 cm	pale brown (10YR6/3) RAD-DIATOM RICH CLAY 56-60% clay, 10-20% diatom, 15% rad, 7-10% aniso min, 2-7% sponge, 0-2% quartz, tr-1% opaque min
1472-1733 cm	pale brown (10YR6/3) to brown (10YR5/3) RAD-MINERAL RICH CLAY 34-43% clay, 20-25% aniso min, 15-20% rad, 7-12% diatom, 5-7% sponge, 2-4% quartz, 2-3% opaque min, 0-1% silicoflag
Mottling	
Very slight to heavy mottling throughout core; very dark grayish brown through light yellowish brown (10YR3/2, 3/3, 4/2, 4/3, 5/3, 5/4, 6/3, 6/4).	
110-130 cm	very dark grayish brown (10YR3/2) QUARTZ-RAD BEARING MINERAL-DIATOM RICH CLAY
206-230 cm	brown (10YR4/3) QUARTZ-RAD BEARING DIATOM RICH MINERAL CLAY
702-717 cm	very dark grayish brown (10YR3/2)
1660-1733 cm	pale brown (10YR6/3) SPONGE-QUARTZ BEARING DIATOM-RAD-MINERAL RICH CLAY
920-945 cm	dark grayish brown (10YR4/2) QUARTZ BEARING MINERAL RICH CLAY-BIOGENIC SILICA Ooze
1171-1180 cm	black (10YR2.5/1) CLAY MINERAL SAND

KEY

	CLAY
	RAD-DIATOM
	DIATOM
	MINERAL
	RAD
	Mn NODULE

*Pliocene

KK75 Sta. 01
PCOD 01
(continued)

1355-1368 cm dark grayish brown (10YR4/2)
CLAY BEARING MINERAL-RAD RICH DIATOM OOZE

1472-1500 cm dark grayish brown (10YR4/2)
CLAY-MINERAL RICH BIOGENIC SILICA OOZE

1507-1580 cm dark grayish brown (10YR4/2)
SPONGE-DIATOM BEARING RAD-MINERAL RICH CLAY

Layering

390-403 cm very dark grayish brown (10YR3/2)
MINERAL BEARING NANNO-CLAY RICH BIOGENIC SILICA OOZE

192-197 cm Mn nodule, approximately 2 cm in diameter

LITHOLOGIC DESCRIPTION

Northeast Hess Rise

KK75 Sta. 02

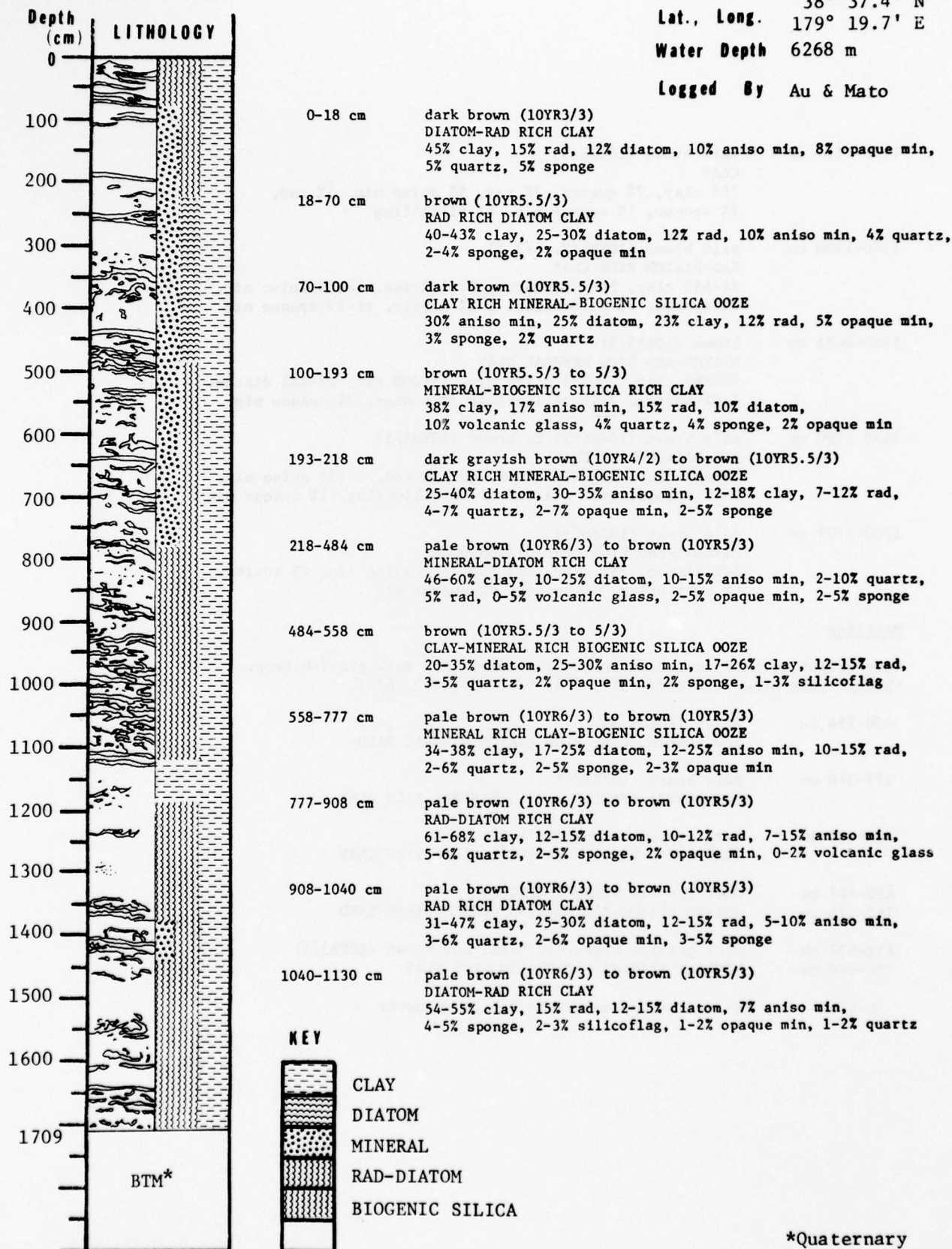
Core ID PCOD 02

Lat., Long. 38° 37.4' N

179° 19.7' E

Water Depth 6268 m

Logged By Au & Mato



KK75 Sta. 02
PCOD 02
(continued)

1130-1160 cm	pale brown (10YR6/3) CLAY 78% clay, 7% quartz, 7% rad, 5% aniso min, 5% rad, 2% sponge, 1% opaque min, 1% silicoflag
1160-1380 cm	pale brown (10YR6/3, 6/3.5) RAD-DIATOM RICH CLAY 51-61% clay, 15-17% diatom, 12-15% rad, 7-10% aniso min, 3% sponge, 2% silicoflag, 1-2% quartz, tr-2% opaque min
1380-1435 cm	brown (10YR5/3) DIATOM-RAD RICH MINERAL CLAY 33-36% clay, 20-25% aniso min, 15-20% rad, 12-15% diatom, 2-4% quartz, 2-4% silicoflag, 3% sponge, 3% opaque min
1435-1700 cm	pale brown (10YR6/3) to brown (10YR5/3) RAD-DIATOM RICH CLAY 55-59% clay, 12-20% diatom, 10-12% rad, 7-12% aniso min, 1-4% sponge, 1-3% quartz, tr-5% silicoflag, 1% opaque min
1700-1709 cm	pale brown (10YR6/3) MINERAL-RAD RICH CLAY DIATOM OOZE 30% diatom, 26% clay, 15% rad, 12% aniso min, 6% quartz, 6% silicoflag, 4% sponge, 1% opaque min

Mottling

Very slight to heavy mottling throughout core; very dark grayish brown through pale brown (10YR3/2, 3/3, 4/2, 5/2, 5/3, 6/2, 6/3).

250-254 cm	brown (10YR5/3) RAD BEARING CLAY RICH DIATOM MINERAL SAND
317-340 cm	pale brown (10YR6/3) RAD-QUARTZ BEARING DIATOM-MINERAL RICH CLAY
369-382 cm	dark grayish brown (10YR4/2) QUARTZ-RAD-DIATOM BEARING MINERAL RICH CLAY
452-467 cm 765-775 cm	dark grayish brown (10YR4/2) QUARTZ-DIATOM-RAD BEARING CLAY MINERAL SAND
618-627 cm 958-980 cm	dark grayish brown (10YR4/2) and brown (10YR5/3) MINERAL BEARING RAD-DIATOM RICH CLAY
0-4 cm	Mn nodule approximately 2.5 cm diameter

LITHOLOGIC DESCRIPTION

South Emperor Basin

KK75 Sta. 03

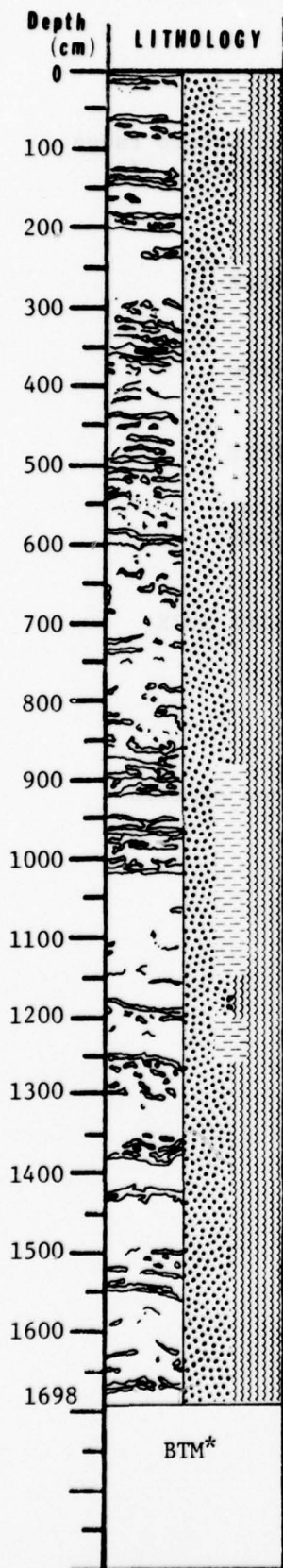
Core ID PCOD 03

Lat., Long. 33° 21.82' N

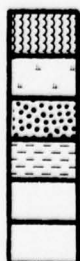
169° 05.39' E

Water Depth 5736 m

Logged By Patterson & Mato



0-74 cm	yellowish brown (10YR5/4) CLAY-RAD RICH MINERAL DIATOM OOZE 32-48% diatom, 25-30% aniso min, 15-17% rad, 12-15% clay, 6% quartz, 2-3% opaque min, 2% volcanic glass, 1-2% sponge
74-255 cm	dark yellowish brown (10YR4/4) to brown (10YR4/3) RAD-MINERAL RICH DIATOM OOZE 41-53% diatom, 15-25% aniso min, 12-15% rad, 6-8% clay, 5-8% quartz, 2-4% opaque min, 1-2% sponge
255-322 cm	dark yellowish brown (10YR4/4) to brown (10YR4/3) RAD-CLAY-MINERAL RICH DIATOM OOZE 35-42% diatom, 22-25% aniso min, 14-17% clay, 12-15% rad, 2-10% quartz, 1-3% opaque min, 1% sponge
322-442 cm	pale brown (10YR6/3) to dark brown (10YR4/3) RAD-CLAY RICH MINERAL DIATOM OOZE 36-40% diatom, 30% anisomin, 12-14% clay, 12% rad, 3-7% quartz, 0-1% volcanic glass, 0-1% sponge
442-480 cm	brown (10YR5/3) RAD-MINERAL RICH ZEOLITIC DIATOM OOZE 35% diatom, 27% zeolite, 20% aniso min, 15% rad, 3% opaque min, 3% quartz, 1% sponge
480-555 cm	yellowish brown (10YR5/4) to dark yellowish brown (10YR4/4) CLAY-MINERAL RICH BIOGENIC SILICA OOZE 25% aniso min, 25% diatom, 25% rad, 15% clay, 10% sponge, 4% silicoflag, 2% opaque min
555-870 cm	pale brown (10YR6/3) to brown (10YR4/3) RAD RICH MINERAL DIATOM OOZE 30-40% diatom, 25-35% aniso min, 15-25% rad, 7-10% clay, 5-7% quartz, 1-3% opaque min, 0-2% sponge
870-1155 cm	pale brown (10YR6/3) to brown (10YR5/3) CLAY-RAD RICH DIATOM MINERAL SAND 25-40% aniso min, 20-30% diatom, 12-20% rad, 10-25% clay, tr-3% sponge, 0-3% opaque min
1155-1194 cm	brown (10YR5/3) RAD RICH DIATOM MINERAL SAND 35% aniso min, 35% diatom, 15% rad, 8% clay, 2% quartz
1194-1250 cm	brown (10YR5/3) CLAY-RAD RICH MINERAL DIATOM OOZE 30-35% diatom, 25-30% aniso min, 15-25% rad, 19-20% clay, 3-5% opaque min, 0-2% quartz
1250-1698 cm	pale brown (10YR6/3) to brown (10YR5/3) MINERAL BIOGENIC SILICA OOZE 25-40% aniso min, 25-35% diatom, 12-25% rad, 8-15% siliceous bioclastics, 5-10% clay, 0-7% opaque min, tr-3% silicoflag

KEY

BIOGENIC SILICA

ZEOLITE

MINERAL

CLAY

*Quaternary

KK75 Sta. 03
PCOD 03
(continued)

Mottling

Very slight to heavy mottling scattered unevenly through core; colors range from very dark gray through pale brown (10YR3/1, 3/2, 3/3, 4/1, 4/2, 4/3, 4/4, 5/3, 5/4, 6/3).

178-198 cm	yellowish brown (10YR5/4) QUARTZ BEARING RAD-CLAY-MINERAL RICH DIATOM OOZE
431-439 cm	very dark gray (10YR3/1) QUARTZ-RAD BEARING DIATOM RICH CLAY MINERAL SAND
475-483 cm	dark grayish brown (10YR4/2) CLAY BEARING QUARTZ-RAD RICH MINERAL DIATOM OOZE
970-985 cm	dark grayish brown (10YR4/2) mottle around nodule RAD-QUARTZ BEARING DIATOM-CLAY RICH MINERAL SAND
1370-1397 cm	dark grayish brown (10YR4/2) CLAY BEARING MINERAL RICH QUARTZ BIOGENIC CILICA OOZE
157-160 cm	Mn nodule approximately 3 cm diameter
974-180 cm	Mn nodule approximately 6 cm diameter
1210 cm	Mn nodule
442-459 cm	top 17 cm of sediment discarded, broke off from section

LITHOLOGIC DESCRIPTION

South Emperor Basin

KK75 Sta. 04

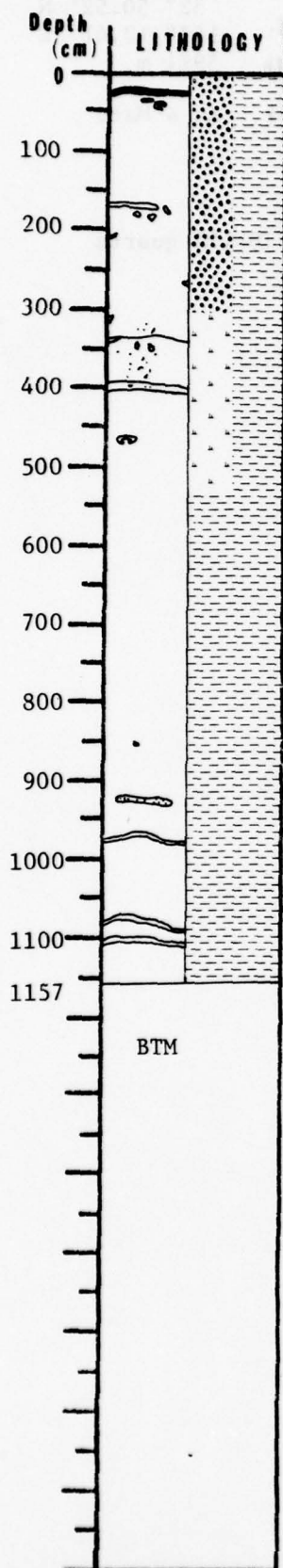
Core ID PCOD 04

Lat., Long. 32° 49.8' N

Water Depth 167° 13.7' E

5946 m

Logged By Au & Lineberger



0-300 cm dark yellowish brown (10YR4/4)

MINERAL RICH CLAY

68-77% clay, 15-20% aniso min, 5-7% quartz,
tr-3% opaque min, tr-1% iso min

300-525 cm dark grayish brown (10YR4/2) to

dark reddish brown (5YR2.5/2)

ZEOLITE CLAY

51-62% clay, 30-40% zeolite, 1-5% aniso min,
tr-3% opaque min, 0-tr% iso min

525-1157 cm dark brown (7.5YR3/2) to

dark reddish brown (5YR2.5/2)

CLAY

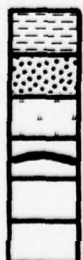
80-96% clay, tr-5% zeolite, 1-10% aniso min,
tr-3% iso min, tr-2% opaque minMottlingVery slight to medium mottling scattered very sparsely
throughout core; dark grayish brown, pale brown, light
yellowish brown and black (10YR4/2, 6/3, 6/4) to (5YR2.5/1).

20-28 cm Mn nodule

328-335 cm dark gray rock fragments

935-940 cm siltstone with black grains

KEY



CLAY

MINERAL

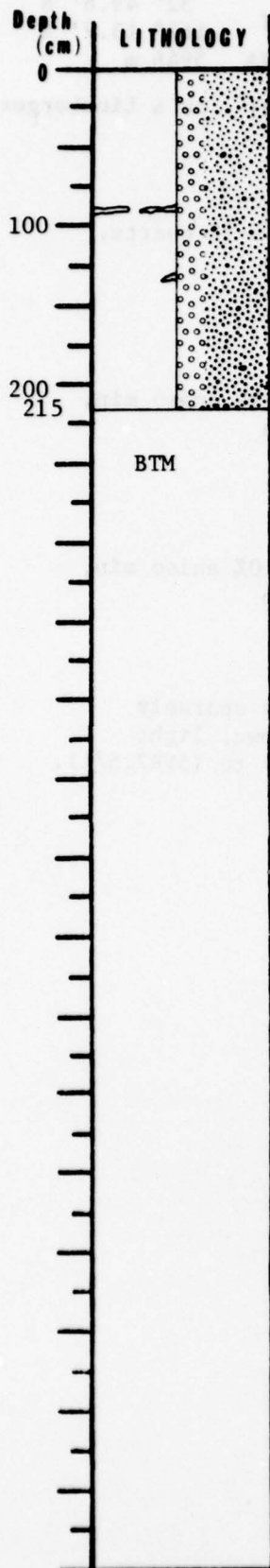
ZEOLITE

Mn NODULE

LITHOLOGIC DESCRIPTION

South Emperor Basin

Core ID KK75 Sta. 05
 PCOD 05
 Lat., Long. 32° 50.52' N
 167° 12.41' E
 Water Depth 5911 m
 Logged By Au & Mato



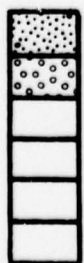
0-215 cm brown (10YR5/3) to (7.5YR5/4)
 QUARTZ RICH MINERAL CLAY
 55-58% clay, 25-30% aniso min, 10-12% quartz
 tr-7% rad

Mottling

Very slight mottles.

82-84 cm light yellowish brown (10YR6/4)
 140-142 cm

KEY



MINERAL CLAY

QUARTZ

LITHOLOGIC DESCRIPTION

South Emperor Basin

KK75 Sta. 07

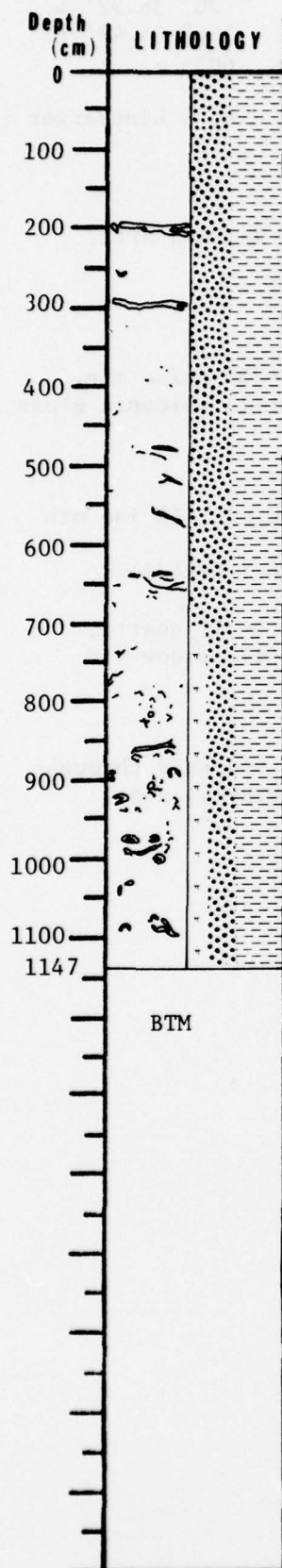
Core ID PCOD 07

Lat., Long. 32° 07.72' N

165° 31.68' E

Water Depth 6130 m

Logged By Au & Mato



0-20 cm dark yellowish brown (10YR4/4)

MINERAL CLAY

59% clay, 30% aniso min, 10% volcanic glass, 1% quartz

20-44 cm brown (10YR4/3) to dark yellowish brown (10YR4/4)

CLAY RICH MINERAL SAND

70% aniso min, 19-21% clay, 2-10% quartz, 1-7% opaque min

44-95 cm dark yellowish brown (10YR4/4)

MINERAL RICH CLAY

77% clay, 20% aniso min, 2% quartz, 1% opaque min

95-660 cm brown (10YR4/3) to dark yellowish brown (10YR4/4)

MINERAL CLAY

43-69% clay, 28-50% aniso min, tr-10% quartz, 0-4% iso min, tr-1% nanno

660-700 cm brown (7.5YR4/3)

MINERAL RICH CLAY

54% clay, 20% aniso min, 12% iso min, 3% opaque min

700-1015 cm brown (7.5YR4/3, 4/2) to (10YR4/3)

ZEOLITE BEARING MINERAL CLAY

30-56% clay, 25-40% aniso min, 5-9% zeolite, 3-5% opaque min, 0-10% iso min

1015-1147 cm brown (10YR4/3)

ZEOLITE BEARING MINERAL RICH CLAY

60-68% clay, 20% aniso min, 6-8% zeolite, 4-9% iso min, 2-3% calcareous frags

Mottling

Very slight to moderate mottling scattered very sparsely throughout the core; light yellowish brown (10YR6/4).

KEY



CLAY

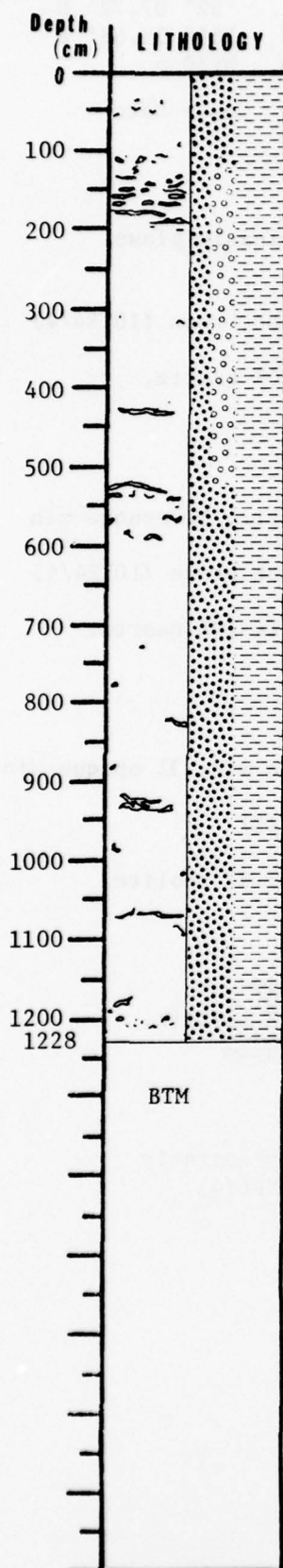
MINERAL

ZEOLITE

LITHOLOGIC DESCRIPTION

South Emperor Basin

Core ID KK75 Sta. 08
 PCOD 08
 Lat., Long. 30° 36.92' N
 166° 04.47' E
 Water Depth 6035 m
 Logged By Au & Lineberger



0-140 cm	brown (10YR4/3) MINERAL RICH CLAY 64-65% clay, 20-25% aniso min, 7-10% quartz, 1-2% opaque min, tr-1% iso min
140-450 cm	brown (10YR4/3 to 5/3) MINERAL-QUARTZ RICH CLAY 57-69% clay, 12-20% quartz, 10-25% aniso min, 1-2% iso min, 1% opaque min, tr-1% volcanic glass
450-525 cm	brown (10YR4/3) MINERAL RICH QUARTZ CLAY 52% clay, 30% quartz, 15% aniso min, 1% iso min
525-1228 cm	dark brown (10YR3.5/3) to brown (10YR4/3) MINERAL RICH CLAY 61-78% clay, 10-25% aniso min, 5-11% quartz, 0-3% zeolite, 1-2% iso min, tr-1% opaque min
<u>Mottling</u> Very slight to slight mottling scattered very sparsely throughout core; colors are light yellowish brown (10YR6/4) and brown (10YR4/3) to (7.5YR5/4).	
915-925 cm	light yellowish brown (10YR6/4) QUARTZ BEARING MINERAL CLAY

KEY



CLAY

MINERAL

QUARTZ

LITHOLOGIC DESCRIPTION

South Emperor Basin

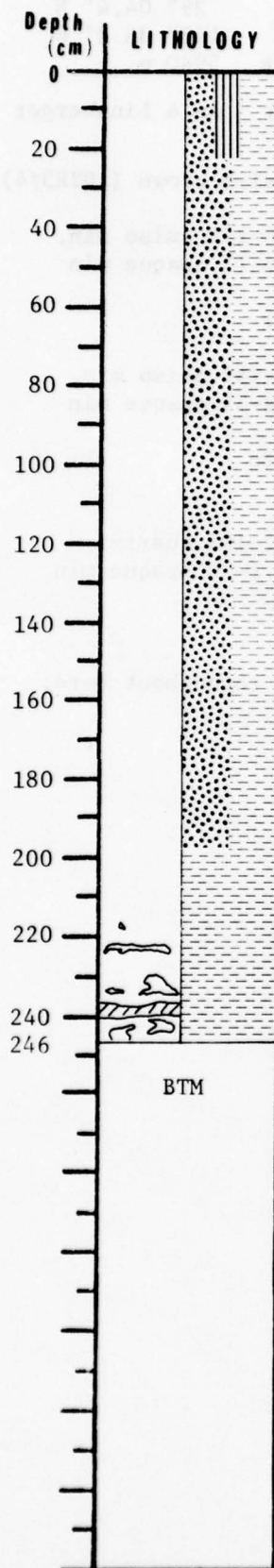
KK75 Sta. 09

Core ID PCOD 09

Lat., Long. 29° 28.32' N
164° 52.14' E

Water Depth 5820 m

Logged By Au & Mato



0-25 cm brown (10YR4/3)
VOLCANIC GLASS BEARING MINERAL CLAY
44% clay, 40% aniso min, 10% volcanic glass,
4% quartz, 2% opaque min

25-155 cm brown (10YR4/3)
MINERAL RICH CLAY
65-84% clay, 11-20% aniso min, 0-5% iso min,
0-5% zeolite, 2% quartz, 1-3% opaque min,
0-2% nanno

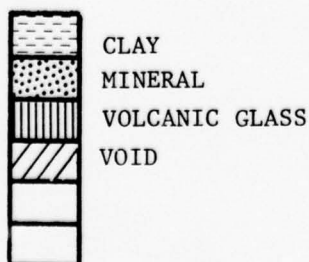
155-246 cm brown (10YR4/3) to dark brown (7.5YR3/2)
CLAY
88-90% clay, 0-7% aniso min, 3-5% opaque min,
2-5% nannos

Mottling

Slight to heavy mottling in bottom portion of core.

218-246 cm pink (7.5YR7/5) mottles

237-240 cm void

KEY

LITHOLOGIC DESCRIPTION

South Emperor Basin

KK75 Sta. 11

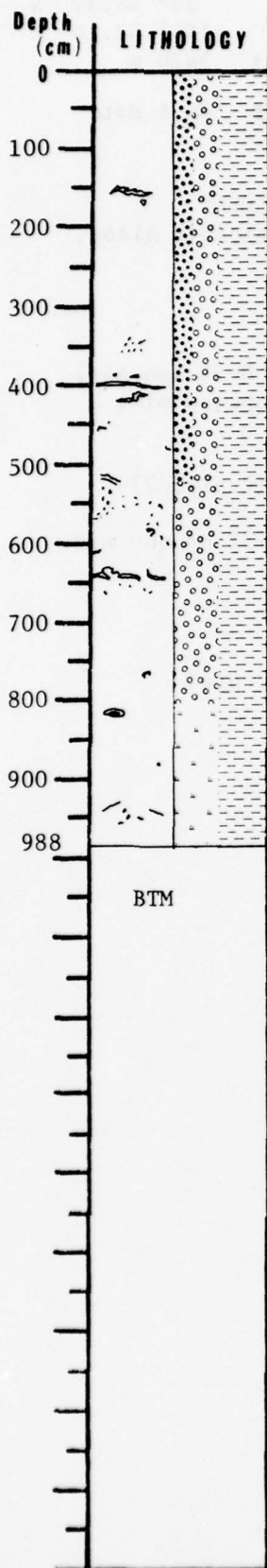
Core ID PCOD 11

Lat., Long. 29° 04.4' N

163° 33.0' E

Water Depth 5940 m

Logged By Au & Lineberger



0-525 cm brown (10YR4/3) to dark yellowish brown (10YR3/4)
MINERAL-QUARTZ RICH CLAY
62-73% clay, 10-20% quartz, 10-12% aniso min,
1-5% iso min, 0-4% zeolite, tr-1% opaque min

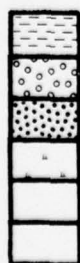
525-805 cm dark yellowish brown (10YR3/4)
QUARTZ RICH CLAY
60-77% clay, 10-20% quartz, 5-15% aniso min,
1-7% zeolite, 1-3% iso min, tr-3% opaque min

805-988 cm very dark brown (7.5YR2.5/2) to
dark brown (7.5YR3/2)
ZEOLITE CLAY
48-64% clay, 30-35% zeolite, 2-10% quartz,
4-8% aniso min, 1-3% iso min, 1-3% opaque min

Mottling

Very slight mottling scattered very sparsely throughout core;
light yellowish brown (10YR6/4).

887-888 cm Mn nodule

KEY

CLAY

QUARTZ

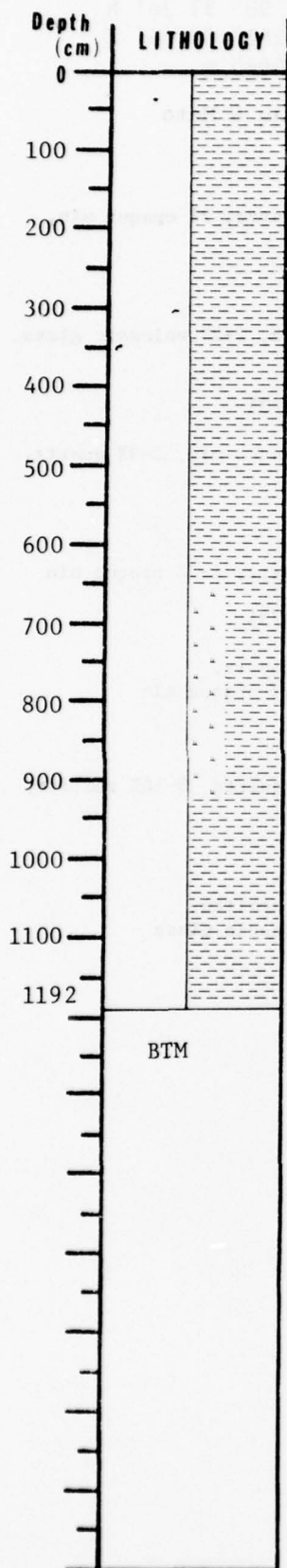
MINERAL

ZEOLITE

LITHOLOGIC DESCRIPTION

South Emperor Basin

Core ID KK75 Sta. 12
 PCOD 12
 Lat., Long. 26° 16.40' N
 160° 16.01' E
 Water Depth 5959 m
 Logged By Au, Patterson & Mato



0-664 cm brown (10YR4/3) to dark yellowish brown (10YR3/4)
 CLAY
 82-92% clay, 2-8% aniso min, 2-7% volcanic glass,
 1-5% opaque min, 1-3% quartz

664-940 cm dark brown (7.5YR3/4)
 ZEOLITE RICH CLAY
 71-80% clay, 12-18% zeolite, 4-8% aniso min,
 1-2% opaque min, tr-2% quartz

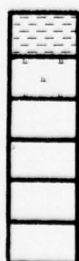
940-1192 cm dark brown (7.5YR3/4) to
 very dark brown (7.5YR2.5/2)
 CLAY
 80-97% clay, 1-10% zeolite, 1-8% aniso min,
 1-2% opaque min, tr-1% quartz

Mottling

Very slight mottling.

45-46 cm light yellowish brown (10YR6/4)
 350-355 cm

KEY



CLAY

ZEOLITE

LITHOLOGIC DESCRIPTION

South Emperor Basin

KK75 Sta. 13

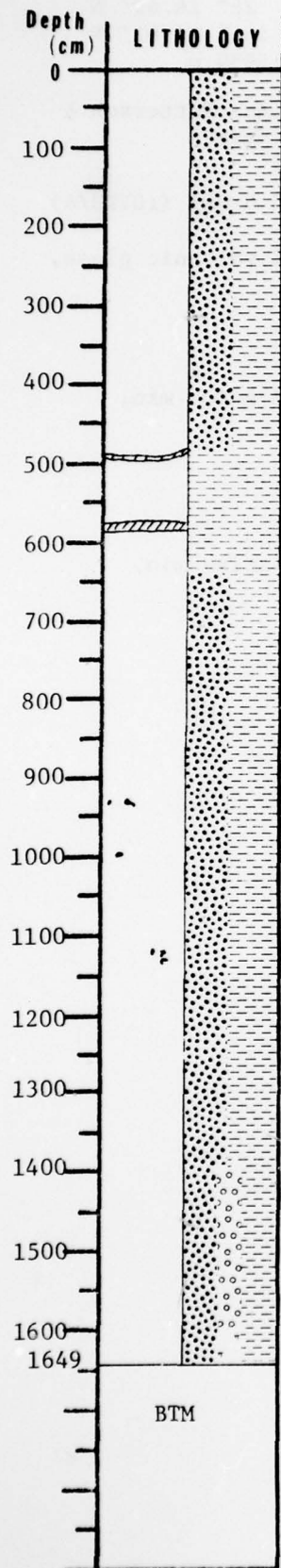
Core ID PCOD 13

Lat., Long. 28° 33.26' N

Water Depth 161° 05.24' E

Water Depth 5645 m

Logged By Au & Mato



0-120 cm	brown (10YR4/3) MINERAL RICH CLAY 68-84% clay, 10-25% aniso min, 2-3% quartz, 2% opaque min, 2% volcanic glass
120-190 cm	brown (10YR4.5/3 to 10YR4/3) MINERAL CLAY 63-66% clay, 30% aniso min, 2-5% quartz, 1-2% volcanic glass, 1% opaque min
190-475 cm	brown (10YR4/3) to dark brown (10YR3.5/3) MINERAL RICH CLAY 65-79% clay, 15-25% aniso min, 2-7% opaque min, 2-3% quartz, 1% volcanic glass
475-620 cm	brown (10YR4.5/3) CLAY 82-83% clay, 8-10% aniso min, 2-7% quartz, 1-5% opaque min
620-1380 cm	brown (10YR4/3) to dark brown (10YR3.5/3) MINERAL CLAY 40-65% clay, 25-40% aniso min, 5-10% quartz, 1-5% volcanic glass, 0-7% zeolite, 1-5% opaque min
1380-1461 cm	dark brown (10YR3.5/3) QUARTZ RICH CLAY MINERAL SAND 30-40% aniso min, 25-46% clay, 12-18% quartz, 8-10% zeolite, 2-8% opaque min, tr-2% volcanic glass
1461-1649 cm	dark brown (7.5YR3/2) ZEOLITE MINERAL CLAY 33-50% clay, 20-30% aniso min, 15-30% zeolite, 3-5% opaque min, 2-4% quartz, 2-3% volcanic glass

Mottling

Very slight mottling.

940-943 cm brown (7.5YR5/4)

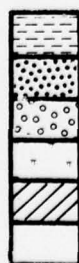
1000-1002 cm

1132-1140 cm

580-590 cm core catcher found

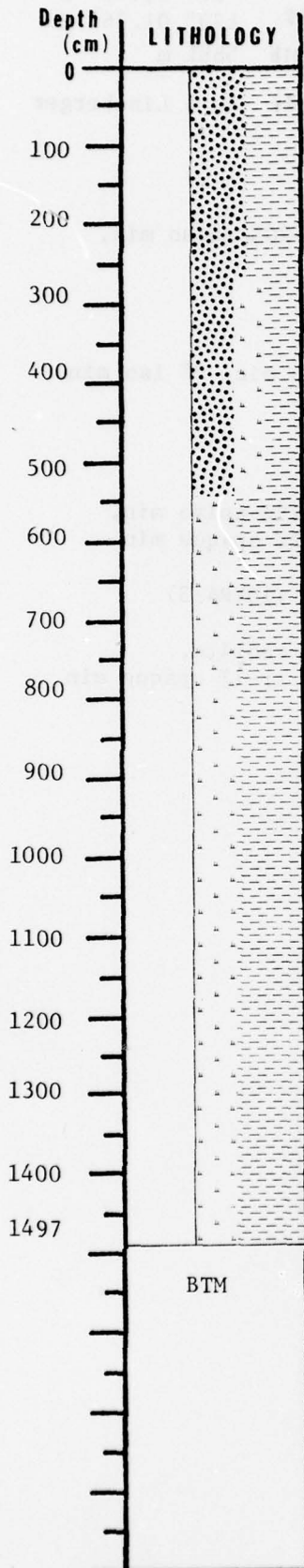
489-490 cm void

580-590 cm void

KEY

LITHOLOGIC DESCRIPTION

Core ID KK75 Sta. 14
 PCOD 14
 Lat., Long. 26° 56.8' N
 170° 37.3' E
 Water Depth 5937 m
 Logged By Lineberger & Au

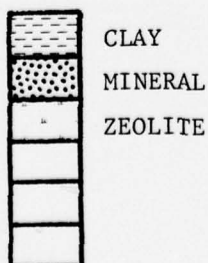


0-270 cm brown (10YR4/3)
 MINERAL CLAY
 59-62% clay, 25-30% aniso min, 5-8% zeolite,
 2-5% iso min, 1% opaque min

270-550 cm very dark brown (7.5YR2.5/2) to
 dark brown (7.5YR3/2)
 MINERAL-ZEOLITE RICH CLAY
 63-68% clay, 15-20% zeolite, 15% aniso min,
 1% iso min, 1% opaque min

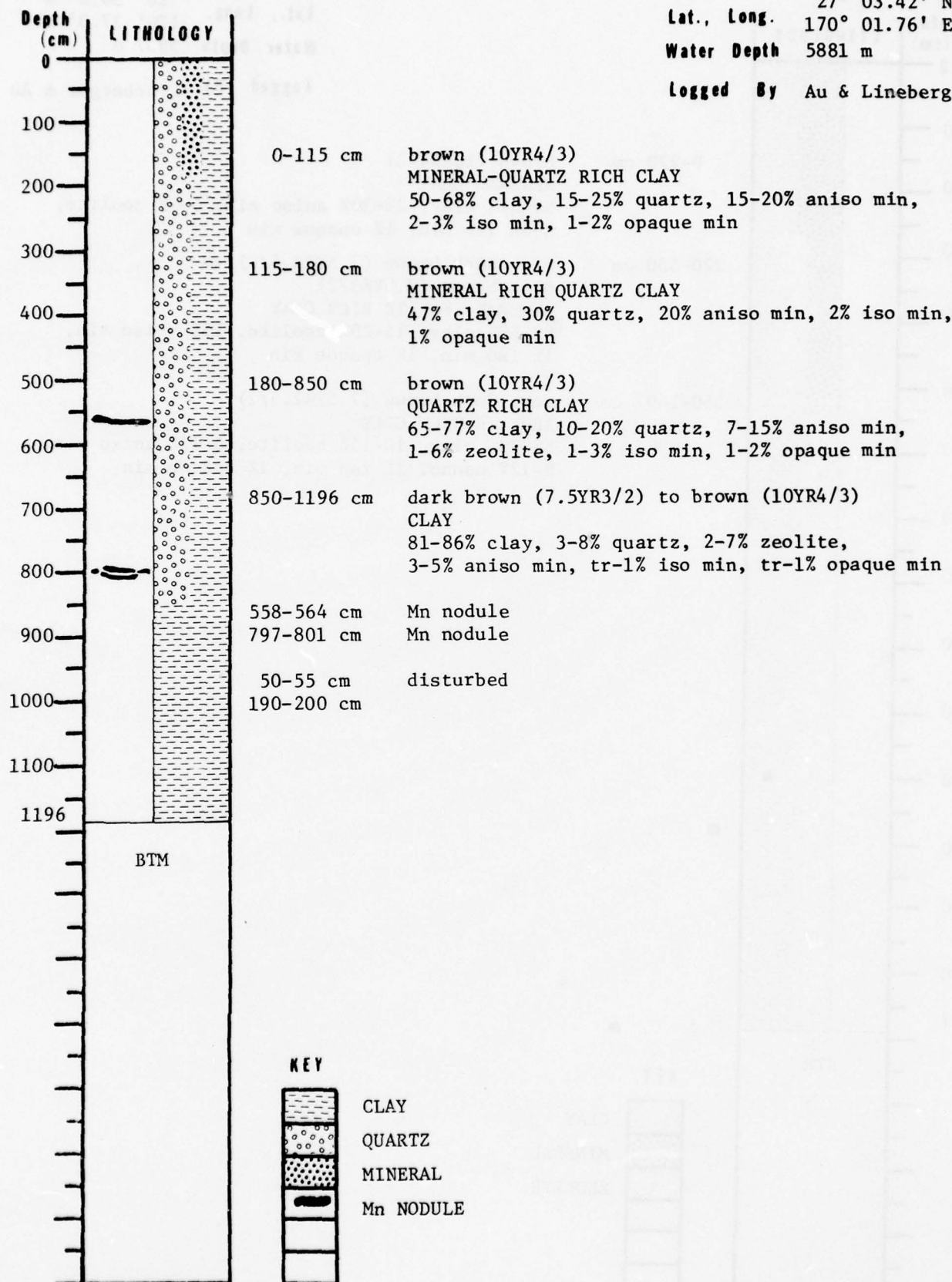
550-1497 cm very dark brown (7.5YR2.5/2)
 ZEOLITE RICH CLAY
 58-73% clay, 10-15% zeolite, 5-15% aniso min,
 8-12% nanno, 1% iso min, 1% opaque min

KEY



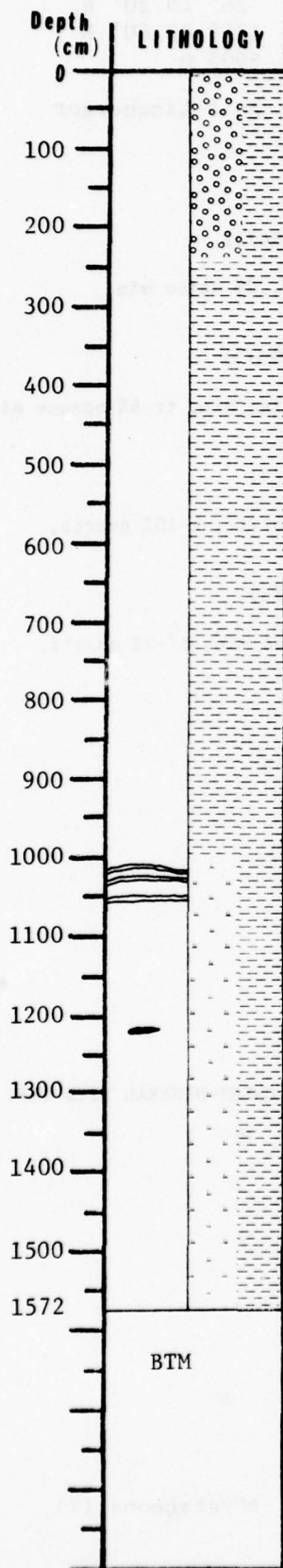
LITHOLOGIC DESCRIPTION

KK75 Sta. 15
 Core ID PCOD 15
 Lat., Long. 27° 03.42' N
 170° 01.76' E
 Water Depth 5881 m
 Logged By Au & Lineberger



A-17
LITHOLOGIC DESCRIPTION

Core ID KK75 Sta. 16
PCOD 16
26° 37.46' N
Lat., Long. 172° 45.34' E
Water Depth 5929 m
Logged By Au & Lineberger



0-230 cm brown (10YR4/3)
QUARTZ RICH CLAY
74-79% clay, 12-20% quartz, 3-4% aniso min,
tr-4% zeolite, 1-2% iso min, 1% opaque min

230-1000 cm brown (10YR4/3)
CLAY
82-91% clay, 2-8% quartz, 1-7% zeolite,
tr-4% aniso min, tr-1% iso min, tr-1% opaque min

1000-1572 cm dark brown (7.5YR3/2) to
very dark brown (7.5YR2.5/2)
ZEOLITE RICH CLAY
86-90% clay, 8-11% zeolite, tr-1% aniso min,
tr-1% opaque min, 0-1% quartz

Layering

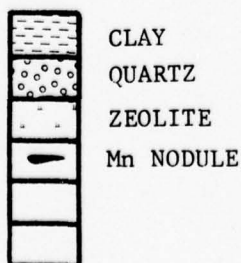
1010-1012 cm light yellowish brown (10YR6/4)

1020-1022 cm light yellowish brown (10YR6/4)

1050-1051 cm dark grayish brown (10YR4/2)
ZEOLITE BEARING CLAY MINERAL SAND

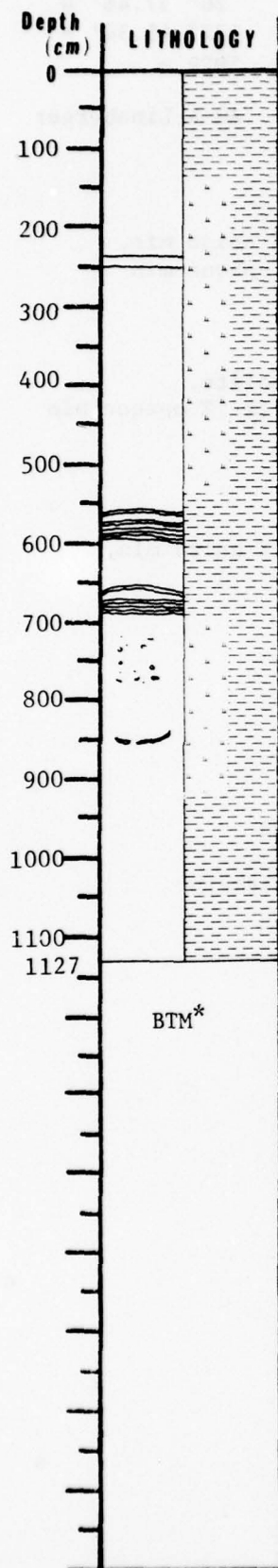
1229-1232 cm Mn nodule approximately 1.5 cm diameter

KEY



LITHOLOGIC DESCRIPTION

KK75 Sta. 17
 Core ID PCOD 17
 Lat., Long. 26° 18.20' N
 175° 02.60' E
 Water Depth 5905 m
 Logged By Au & Lineberger



- 0-130 cm dark brown (7.5YR3.5/2) to brown (10YR4/3)
 CLAY
 82-86% clay, 7-10% zeolite, 4% quartz, 2% aniso min,
 1% iso min
- 130-535 cm dark brown (7.5YR3.5/2) to brown (10YR5/3)
 ZEOLITE RICH CLAY
 62-87% clay, 11-15% zeolite, tr-8% aniso min, tr-6% opaque min,
 tr-5% quartz, tr-1% iso min
- 535-684 cm dark brown (7.5YR3/2) to brown (10YR5/3)
 CLAY
 67-87% clay, 2-10% aniso min, 2-8% zeolite, 1-10% quartz,
 tr-4% opaque min, tr-8% chert
- 684-920 cm dark brown (7.5YR3/2) to brown (10YR5/3)
 ZEOLITE RICH CLAY
 71-82% clay, 12-20% zeolite, 1-4% aniso min, tr-2% quartz,
 tr-1% opaque min
- 920-1125 cm dark brown (7.5YR3/2)
 CLAY
 92-95% clay, 2-5% zeolite, 1% aniso min

Mottling

Very slight mottling.

- 723-743 cm dark brown (7.5YR3/2)
 753-780 cm
 845-847 cm pale brown (10YR6/4)

Layering

- 235-250 cm brown (10YR5/3)
 QUARTZ-VOLCANIC GLASS-ZEOLITE BEARING CHERT-MINERAL RICH CLAY
- 569-570 cm dark grayish brown (10YR4/2)
 579-580 cm parallel layering
 591-592 cm
 592-594 cm
 594-596 cm

KEY

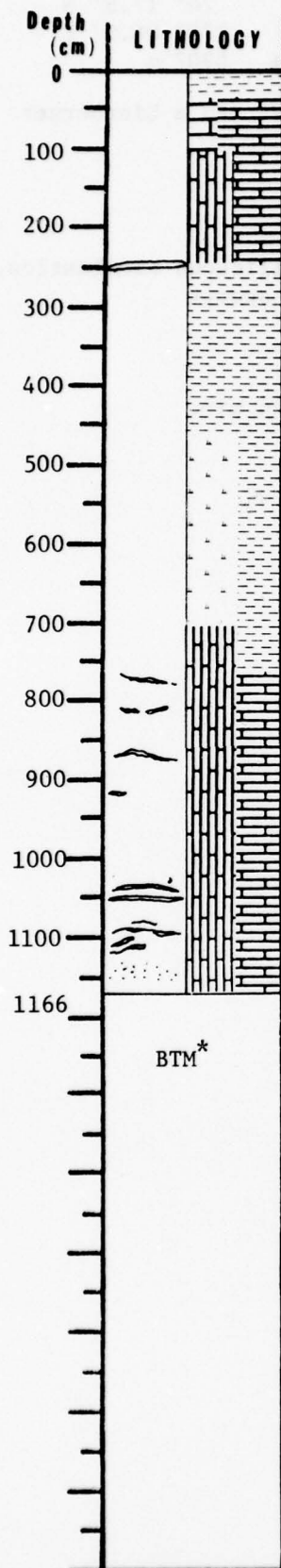
CLAY

ZEOLITE

*Cretaceous (?)

LITHOLOGIC DESCRIPTION

Core ID KK75 Sta. 18
 PCOD 18
 Lat., Long. 26° 17.86' N
 175° 05.71' E
 Water Depth 5909 m
 Logged By Au & Lineberger



- 0-24 cm brown (10YR4/3)
 CLAY
 81% clay, 6% non-biogenic carbonate, 4% aniso min, 4% zeolite, 2% quartz
- 24-100 cm very pale brown (10YR7/3)
 FORAM BEARING NANNO OOZE
 63% nanno, 20% discoaster, 7% foram, 5% clay, 2% zeolite
- 100-247 cm very pale brown (10YR7/3)
 CALCAREOUS BIOCLASTIC RICH NANNO OOZE
 44-55% nanno, 20-25% calcareous bioclastics, 15-20% discoaster, 3-5% foram, 2% zeolite, 1-2% clay, tr-1% iso min
- 247-460 cm brown (10YR4/3) to dark brown (7.5YR3/2)
 CLAY
 76-88% clay, 1-10% calcareous bioclastics, 3-7% zeolite, tr-4% nanno, tr-3% iso min, tr-3% quartz, tr-1% discoaster, tr-1% opaque min
- 460-710 cm dark brown (7.5YR3/2)
 ZEOLITE RICH CLAY
 74-96% clay, 10-20% zeolite, 1-2% aniso min, tr-2% quartz, tr-1% iso min
- 710-764 cm very pale brown (10YR7/3)
 CALCAREOUS BIOCLASTIC RICH CLAY
 74% clay, 15% calcareous bioclastics, 7% zeolite, 1% aniso min, 1% discoaster
- 764-1166 cm brown (10YR5/3)
 CALCAREOUS BIOCLASTIC NANNO OOZE
 40-45% nanno, 34-40% calcareous bioclastics, 8-15% discoaster, 2-5% clay, 1-3% foram, tr-3% zeolite

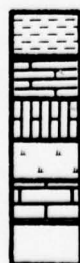
Mottling

Very slight mottling.

- 780-864 cm white (10YR8/2)
 913-1050 cm
 1085-1155 cm

Layering

- 243-247 cm white (10YR8/2)
 FORAM-DISCOASTER RICH CALCAREOUS BIOCLASTIC NANNO OOZE

KEY

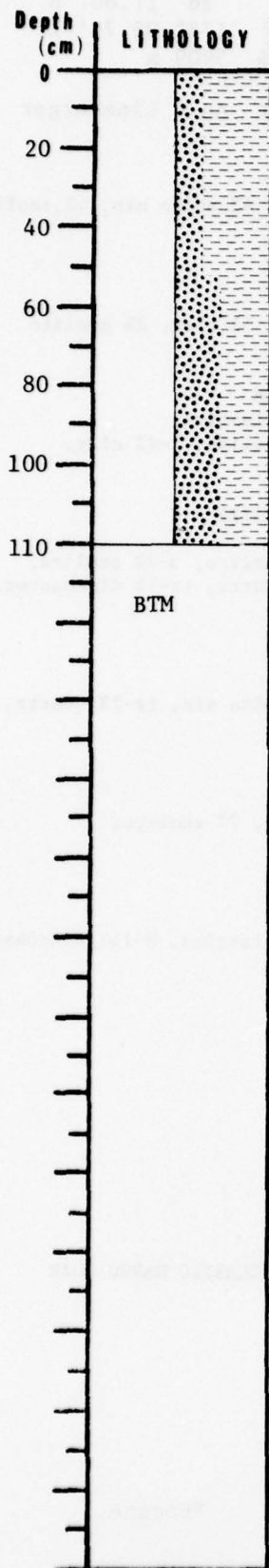
CLAY
 NANNO
 CALCAREOUS BIOCLASTIC
 ZEOLITE
 FORAM

*Eocene

LITHOLOGIC A-20 DESCRIPTION

South of Lisianski Island

Core ID KK75 Sta. 19
 FFC 02
 Lat., Long. 26° 17.8' N
 175° 06.0' E
 Water Depth 5907 m
 Logged By Au & Lineberger



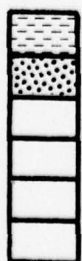
0-52 cm

brown (10YR4/3)
 MINERAL RICH CLAY
 76% clay, 15% aniso min, 3% siliceous bioclastics,
 2% iso min, 2% opaque min, 1% sponge

52-110 cm

brown (10YR4/3)
 MINERAL CLAY
 54% clay, 40% aniso min, 2% iso min,
 2% opaque min, 1% zeolite

KEY



LITHOLOGIC DESCRIPTION

South of Lisianski Island

KK75 Sta. 19

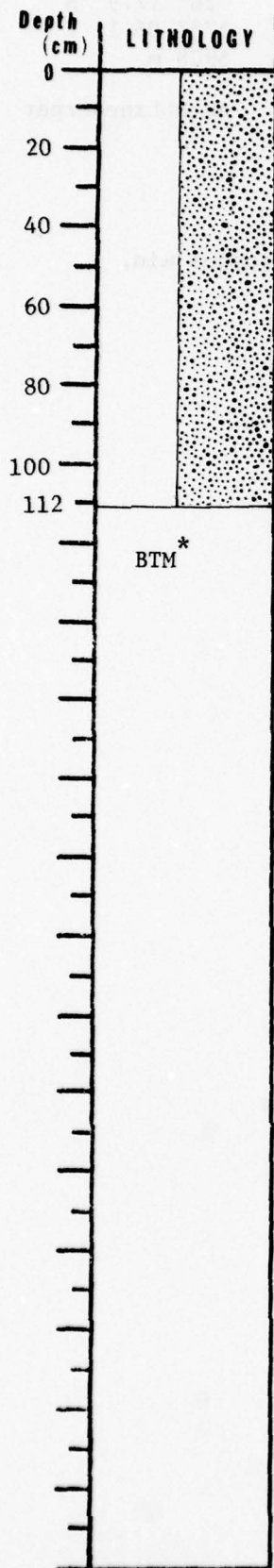
Core ID FFC 03

Lat., Long. 26° 17.9' N

175° 06.0' E

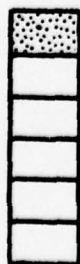
Water Depth 5908 m

Logged By Au & Lineberger



0-112 cm brown (10YR4/3)
MINERAL CLAY
56-66% clay, 40% aniso min, 2% opaque min

KEY



MINERAL CLAY

* Quaternary

A-22

LITHOLOGIC DESCRIPTION

South of Lisianski Island

KK75 Sta. 19

Core ID

FFC 04

Lat., Long.

26° 17.9' N

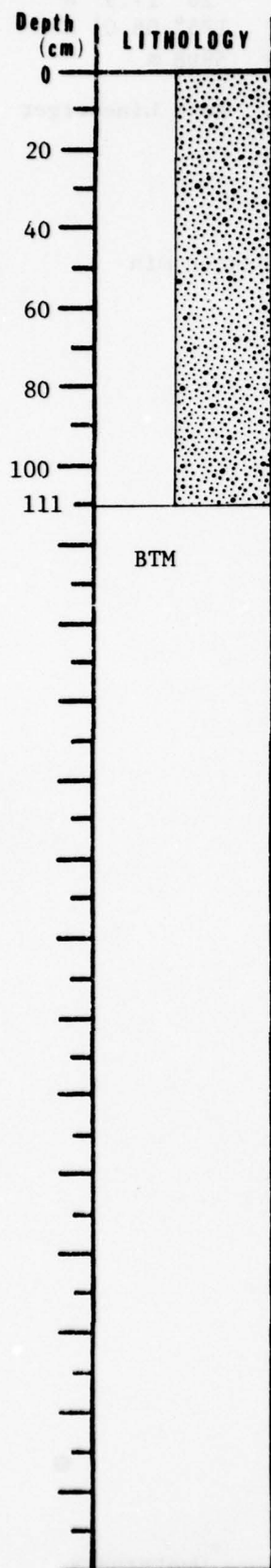
Water Depth

175° 06.1' E

5908 m

Logged By

Au & Lineberger



0-111 cm

brown (10YR4/3)

MINERAL CLAY

55-56% clay, 40% aniso min, 2-3% opaque min,
tr-1% zeolite

KEY

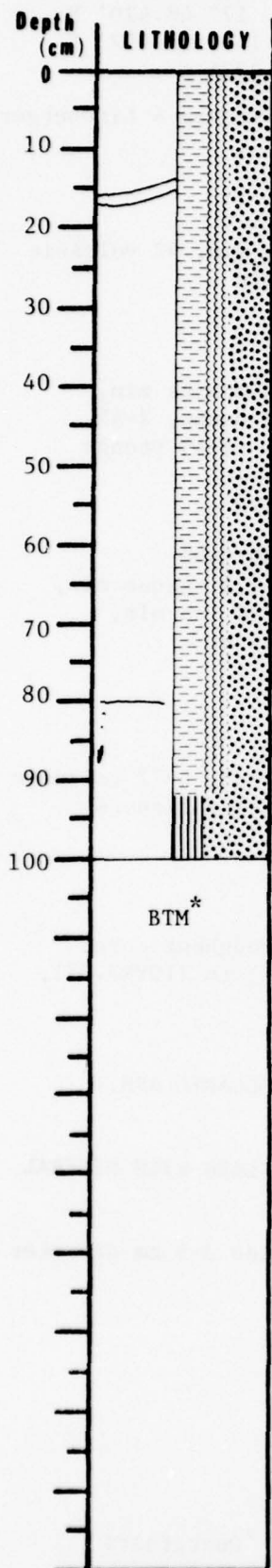


MINERAL CLAY

LITHOLOGIC DESCRIPTION

South Honshu Rise

Core ID KK76-01-03 Sta. 12
 FFC 03
 Lat., Long. 17° 48.791' N
 144° 56.492' E
 Water Depth 3381 m
 Logged By Lineberger & Wenkam



0-93 cm very dark gray (10YR3/1) to brown (10YR4/3)
 CLAY-SILICEOUS RICH MINERAL SAND
 30% aniso min, 12-30% iso min, 8-15% siliceous
 bioclastics, 5-15% rad, 12-16% clay, 2-6% volcanic
 glass, 2-5% opaque min, 0-5% nanno, 0-2% foram,
 tr-1% diatom

93-100 cm very dark grayish brown (10YR3/2)
 VOLCANIC GLASS RICH MINERAL SAND
 45% aniso min, 13% iso min, 12% volcanic glass,
 10% opaque min, 8% clay, 7% siliceous bioclastics,
 2% foram, 1% diatom, 1% nanno, 1% rad

Mottling

Very slight mottling of very dark gray (10YR3/1).

Layering

80 cm very dark gray (10YR3/1)
 NANNO-VOLCANIC GLASS BEARING CLAY RICH MINERAL SAND

KEY

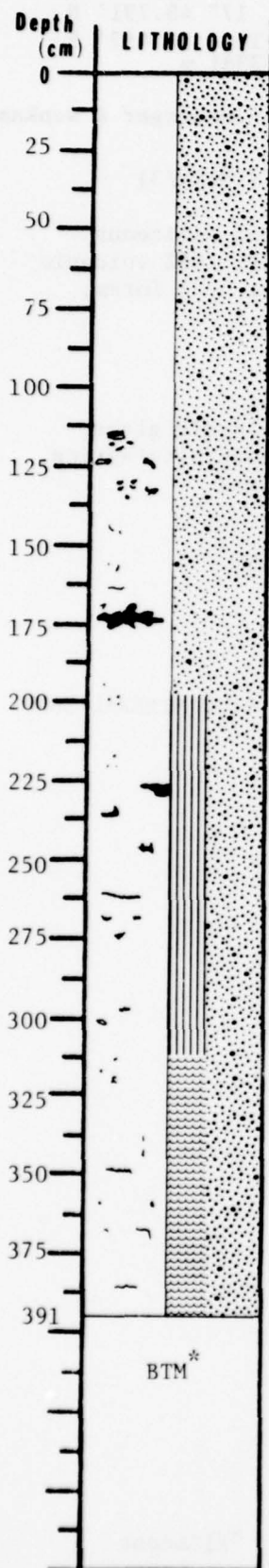
MINERAL
 SILICEOUS
 CLAY
 VOLCANIC GLASS

*Pliocene

LITHOLOGIC DESCRIPTION

South Honshu Rise

Core ID KK76-01-03 Sta. 12
 PCOD 01
 Lat., Long. 17° 48.420' N
 144° 53.097' E
 Water Depth 3326 m
 Logged By Wenkam & Lineberger

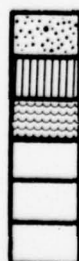


- 0-75 cm dark brown (10YR3/3)
 MINERAL CLAY
 44% clay, 40% aniso min, 7% opaque min, 4% volcanic glass, 2% rad, 1% diatom, 1% iso min
- 75-194 cm dark brown (10YR3/3)
 CLAY MINERAL SAND
 30-35% aniso min, 27-33% clay, 10% opaque min, 5-10% rad, 6-8% volcanic glass, 5% nanno, 2-4% diatom, 1-4% siliceous bioclastic, tr-1% sponge
- 194-310 cm very dark grayish brown (10YR3/2) to dark brown (10YR3/3)
 VOLCANIC GLASS BEARING CLAY MINERAL SAND
 35-39% aniso min, 29-40% clay, 10-12% opaque min, 5-10% volcanic glass, 3-7% rad, 2-3% iso min, 1-3% siliceous bioclastic, tr-4% diatom
- 310-391 cm very dark grayish brown (10YR3/2) to dark brown (10YR3/3)
 RAD BEARING CLAY RICH MINERAL SAND
 35-45% aniso min, 23% clay, 7-10% rad, 5-7% volcanic glass, 3% iso min, 0-3% nanno, tr-2% siliceous bioclastic, 0-1% ceratolith

Mottling

Slight to heavy mottling scattered sparsely throughout core; colors range from black through dark brown (N4/) to (10YR2.5/1, 3/1, 3/3, 4/3).

- 106-209 cm very dark gray (10YR3/1)
 NANNO BEARING MINERAL-CLAY RICH VOLCANIC ASH
- 114-124 cm dark brown (10YR4/3)
 DIATOM-RAD-CLAY BEARING VOLCANIC GLASS RICH MINERAL SAND
- 0-106 cm dark brown (10YR3/3) silt Mn-nodules 3-5 cm diameter

KEY

MINERAL CLAY
 VOLCANIC GLASS
 RAD

*Quaternary

LITHOLOGIC DESCRIPTION

South Honshu Rise

KK76-01-03 Sta. 15

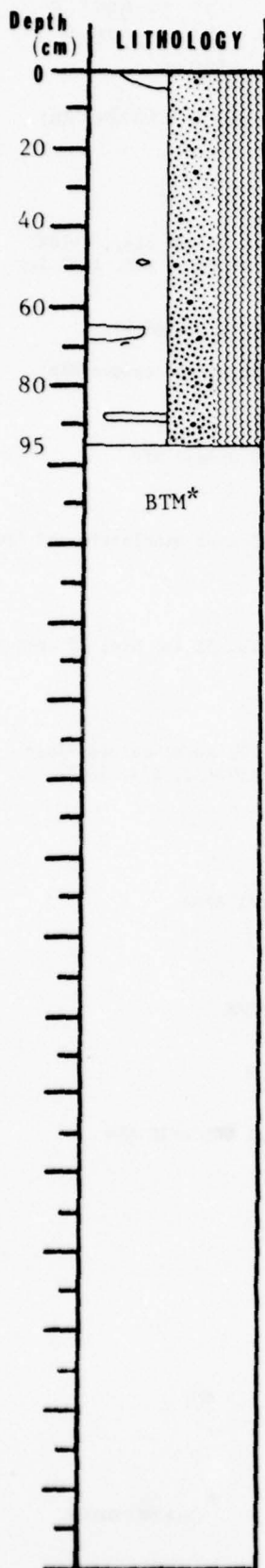
Core ID FFC 04

Lat., Long. 17° 53.360' N

144° 20.191' E

Water Depth 4363 m

Logged By Lineberger & Foreman



0-95 cm dark brown (10YR3/3)
CLAY RICH MINERAL SILICEOUS OOZE
25-30% aniso min, 20-30% siliceous bioclastics,
17-25% clay, 10% rad, 4-7% iso min, 1-7% opaque min,
2-3% volcanic glass, 2-3% diatom

Mottling

Moderate to heavy mottling scattered sparsely throughout core;
colors range from black (10YR2.5/1) to very dark gray (10YR3/1).

64-68 cm black (10YR2.5/1)
CLAY-VOLCANIC GLASS RICH MINERAL SAND

68 cm pebble

*Quaternary

LITHOLOGIC DESCRIPTION

West Stewart Basin

KK76-01-03 Sta. 03

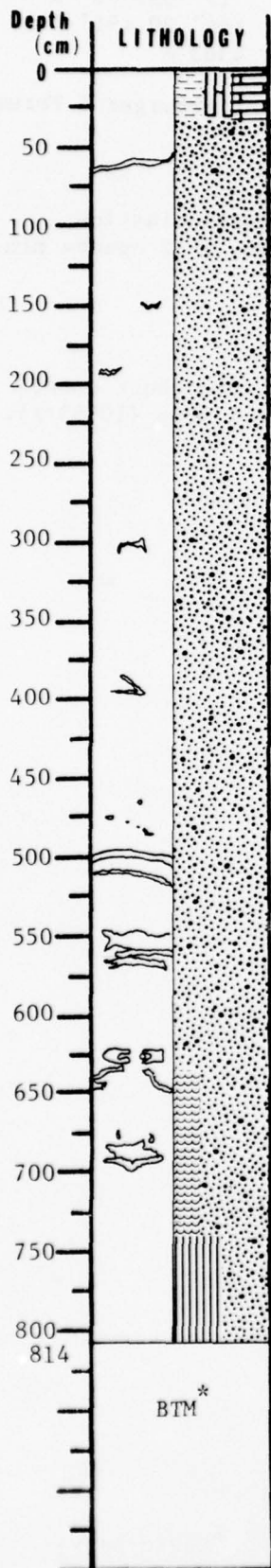
Core ID PCOD 02

Lat., Long. 7° 39.097' S

169° 43.070 E

Water Depth 4750 m

Logged By Au & Lineberger



0-22 cm dark yellowish brown (10YR4/4)
CLAY-CALCAREOUS BIOCLASTIC RICH NANNO OOZE
30-41% nanno, 15-30% calcareous bioclastic, 13-20% clay, 7-10%
rad, 5% foram, 5% siliceous bioclastic, 2-4% aniso min, 1-3% iso
min, 1-2% diatom, tr-1% opaque min

22-450 cm dark reddish gray (5YR4/2) to brown (10YR4/3, 7.5YR4/4)
MINERAL CLAY
63-71% clay, 25-30% aniso min, 1-4% iso min, tr-1% opaque min

450-620 cm brown (7.5YR4/3)
MINERAL RICH CLAY
81% clay, 12-15% aniso min, 3% iso min, 1% opaque min

620-740 cm dark reddish gray (5YR4/2)
RAD RICH MINERAL CLAY
30% clay, 30% aniso min, 18% rad, 10% siliceous bioclastic, 3% iso
min, 3% volcanic glass, 2% opaque min

750-814 cm dark reddish gray (5YR4/2)
MINERAL RICH CLAY VOLCANIC ASH
44% volcanic glass, 30% clay, 20% aniso min, 5% iso min, 1% opaque
min

Mottling

Very slight to heavy mottling scattered throughout most of core; colors range
from dark brown through yellowish brown (7.5YR4/2) to (10YR4/2, 5/3, 5/4).

190-193 cm yellowish brown (10YR5/4)

470-488 cm MINERAL RICH CLAY

630-650 cm dark grayish brown (10YR4/2)
DIATOM-VOLCANIC GLASS-RAD RICH CLAY MINERAL SAND

Layering

51-61 cm yellowish brown (10YR5/4)
RAD-VOLCANIC GLASS BEARING MINERAL RICH CLAY

497-502 cm dark grayish brown (10YR4/2)
RAD-CLAY BEARING MINERAL RICH VOLCANIC ASH

674-682 cm dark grayish brown (10YR4/2)
SILICEOUS BIOCLASTIC-RAD RICH CLAY MINERAL VOLCANIC ASH

0-80 cm soupy and disturbed sediments

656-658 cm partially void

KEY

NANNO

MINERAL CLAY

VOLCANIC ASH

CALCAREOUS BIOCLASTIC

RAD

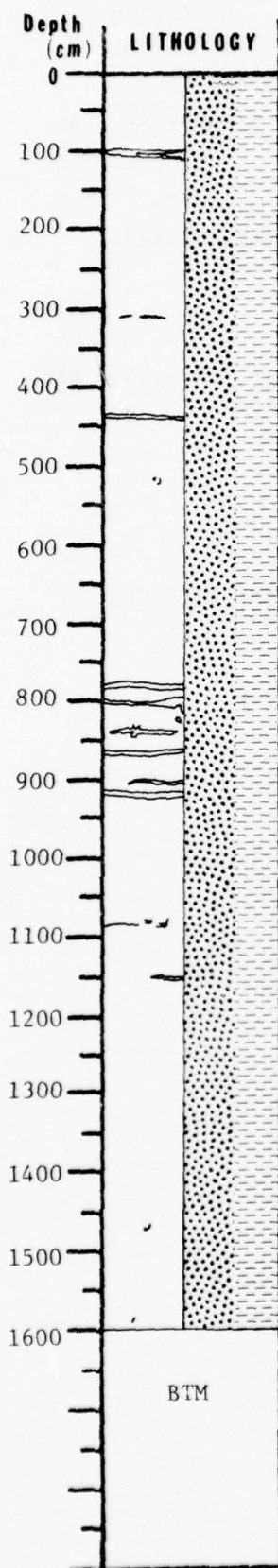
CLAY

* Quaternary

LITHOLOGIC DESCRIPTION

Stewart Basin

Core ID KK76-01-03 Sta. 04
 PCOD 03
 Lat., Long. 7° 7.112' S
 170° 57.878' E
 Water Depth 5017 m
 Logged By Lineberger & Au



0-15 cm brown (7.5YR4/3)
 RAD-MINERAL RICH CLAY
 52% clay, 20% aniso min, 15% rad, 10% siliceous
 bioclastics, 1% diatom, 1% iso min

15-1600 cm brown (10YR4/3) to (7.5YR4/4)
 MINERAL CLAY
 64-82% clay, 15-27% aniso min, 1-8% zeolite,
 tr-4% opaque min, 1-2% iso min

Mottling

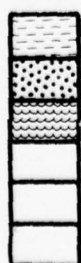
Very slight mottling scattered sparsely throughout core; colors
 range from dark grayish brown (10YR4/2) to yellowish brown
 (10YR5/4).

100-104 cm yellowish brown (10YR5/4)
 835-842 cm MINERAL RICH CLAY

Layering

439-442 cm brown (7.5YR4/3) slightly lithified
 856-863 cm brown (10YR5/3)
 906-911 cm ZEOLITE BEARING MINERAL RICH CLAY

49-51 cm Mn nodule found; dimensions 2 x .5 x .5 cm
 1176-1188 cm disturbed

KEY

CLAY
 MINERAL
 RAD

LITHOLOGIC DESCRIPTION

Stewart Basin

KK76-01-03 Sta. 05

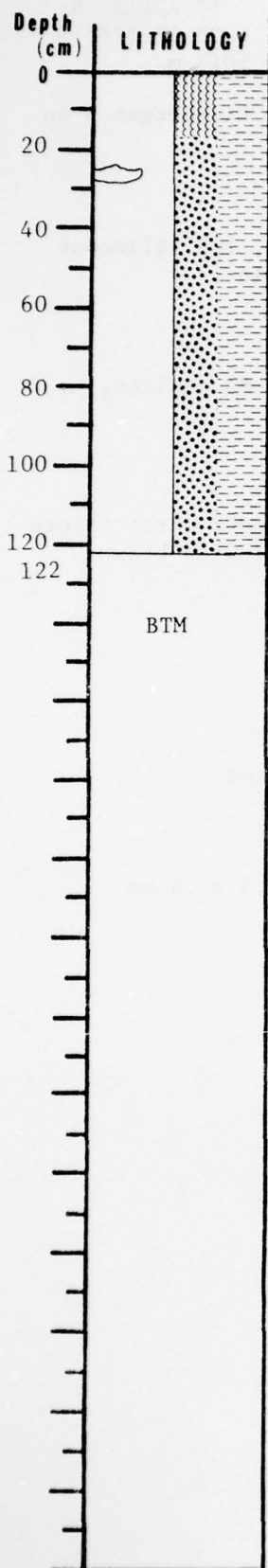
Core ID FFC 11

Lat., Long. 6° 44.790' S

171° 45.804' E

Water Depth 5291 m

Logged By Lineberger & Au



0-15 cm brown (10YR4/3)
SILICEOUS RICH CLAY
57% clay, 25% siliceous bioclastics, 10% rad,
6% aniso min

15-122 cm brown (10YR4/3)
MINERAL CLAY
70% clay, 25% aniso min, 1% iso min, 1% opaque min,
1% siliceous bioclastics, 1% zeolite

Mottling

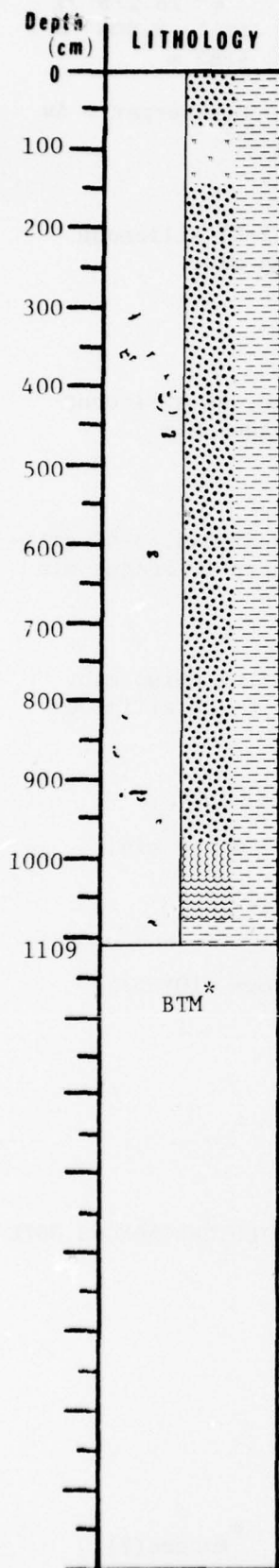
Heavy mottle of yellowish brown (10YR5/4).

22-27 cm yellowish brown (10YR5/4)
SILICEOUS BIOCLASTIC BEARING MINERAL RICH CLAY

LITHOLOGIC DESCRIPTION

Stewart Basin

Core ID KK76-01-03 Sta. 06
 PCOD 05
 Lat., Long. 4° 43.903' S
 173° 25.652' E
 Water Depth 4716 m
 Logged By Lineberger & Au



0-62 cm	brown (10YR4/3) MINERAL RICH CLAY 80-86% clay, 10-15% aniso min, 1-2% opaque min, 1-2% zeolite, 1% iso min
62-125 cm	brown (10YR5/3) to (7.5YR4/2) ZEOLITE RICH CLAY 78% clay, 15% zeolite, 5% aniso min, 1% iso min, 1% opaque min
125-980 cm	brown (10YR4/3 to 7.5YR4/2) MINERAL RICH CLAY 79-92% clay, 3-15% aniso min, tr-5% zeolite, tr-3% iso min, tr-2% opaque min, 0-8% siliceous bioclastics, 0-7% rad
980-1025 cm	brown (10YR4/3) SILICEOUS BIOCLAST CLAY 63% clay, 30% siliceous bioclastics, 3% iso min, 2% aniso min, 1% rad
1025-1075 cm	brown (10YR4/3) RAD RICH CLAY 55% clay, 25% rad, 15% siliceous bioclastics, 3% aniso min, 1% iso min
1075-1109 cm	brown (10YR4/3) CLAY 87% clay, 8-10% siliceous bioclastics, 1-2% aniso min, 1% iso min, 0-1% rad

Mottling

Very slight mottling of yellowish brown (10YR5/4) scattered very sparsely throughout core.

76-90 cm void, sediment lost

KEY

	CLAY
	MINERAL
	SILICEOUS BIOCLAST
	ZEOLITE
	RAD

* Middle Miocene

LITHOLOGIC DESCRIPTION

Stewart Basin

KK76-01-03 Sta. 07

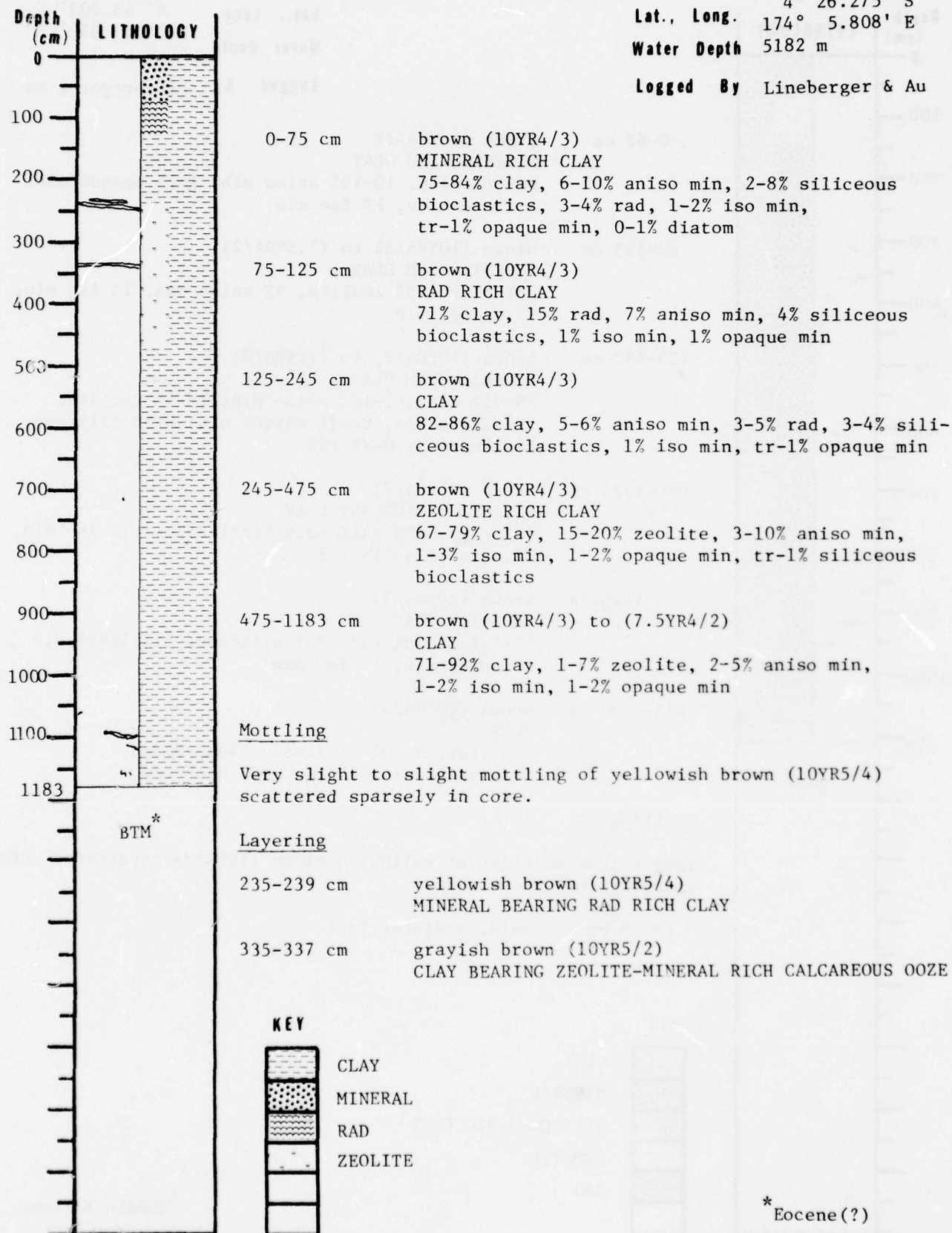
Core ID PCOD 06

Lat., Long. 4° 26.275' S

174° 5.808' E

Water Depth 5182 m

Logged By Lineberger & Au



LITHOLOGIC DESCRIPTION

Central Pacific Basin

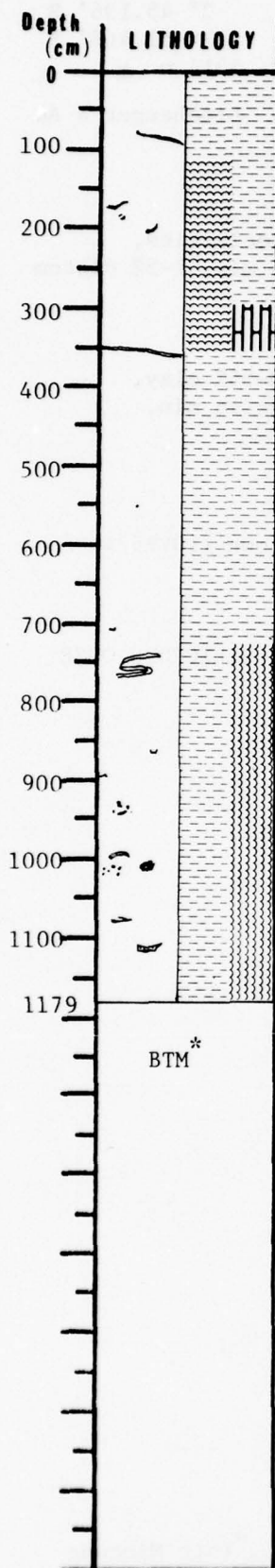
KK76-01-03 Sta. 03

Core ID PCOD 07

Lat., Long. 2° 45.448' S
177° 53.531' E

Water Depth 5317 m

Logged By Lineberger & Au

0-125 cm brown (10YR4/3)
CLAY77-82% clay, 4-8% siliceous bioclastics, 5% aniso min,
2-3% zeolite, 3% rad, 1-2% opaque min, 1% iso min125-292 cm brown (10YR4/3)
RAD CLAY44% clay, 35% rad, 10% siliceous bioclastics,
7% aniso min, 2% diatom, 1% iso min, 1% sponge292-348 cm brown (10YR5/3)
RAD CALCAREOUS OOZE30% calcareous bioclastics, 30% rad, 13% nanno,
8% siliceous bioclastics, 5% aniso min, 5% clay,
5% discoaster, 3% diatom, 2% foram, 1% sponge,
1% iso min, 1% opaque min348-725 cm brown (10YR4/3)
CLAY67-90% clay, 1-10% siliceous bioclastics,
1-6% aniso min, 0-12% rad, 0-5% zeolite,
tr-2% iso min, tr-2% opaque min, 0-1% sponge725-1179 cm brown (10YR4/3)
CLAY SILICEOUS OOZE
20-52% clay, 15-63% siliceous bioclastics,
15-35% rad, 1-5% aniso min, tr-5% diatom,
tr-3% iso min, tr-1% opaque minMottling

Very slight mottling of yellowish brown (10YR5/4)

870-873 cm yellowish brown (10YR5/4)
MINERAL-DIATOM BEARING CLAY SILICEOUS OOZELayering348-349 cm white (10YR9/1)
MINERAL-CLAY BEARING RAD RICH CALCAREOUS OOZE**KEY**

CLAY

CALCAREOUS

SILICEOUS

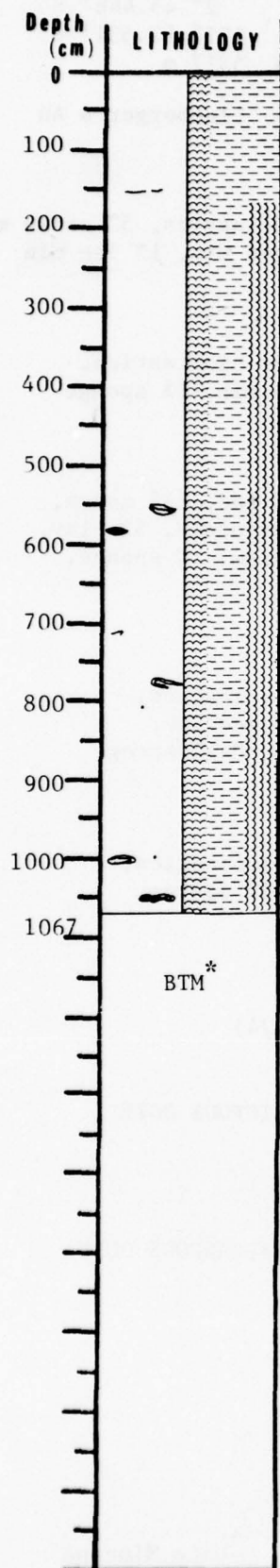
RAD

*Late Miocene

LITHOLOGIC DESCRIPTION

Central Pacific Basin

Core ID KK76-01-03 Sta. 08
 PCOD 08
 Lat., Long. 2° 45.136' S
 177° 51.468' E
 Water Depth 5314 m
 Logged By Lineberger & Au



0-118 cm brown (10YR4/3)
 RAD RICH CLAY
 41-66% clay, 15-25% siliceous bioclastics,
 10-20% rad, 5% aniso min, 2% iso min, 1-5% diatom

118-1067 cm brown (10YR4/3) to (7.5YR4/2)
 RAD RICH CLAY SILICEOUS OOZE
 25-54% siliceous bioclastics, 20-55% clay,
 15-40% rad, 2-8% iso min, 1-8% aniso min,
 0-7% diatom, 0-1% opaque min

Mottling

Very slight to slight mottling of yellowish brown (10YR5/4)
 scattered sparsely in core.

564-567 cm yellowish brown (10YR5/4)
 MINERAL-DIATOM BEARING CLAY RICH SILICEOUS OOZE

KEY



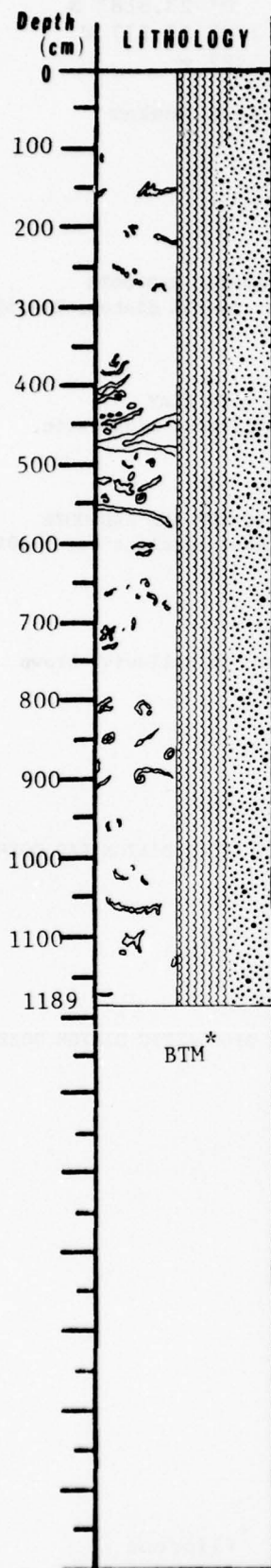
CLAY
 SILICEOUS
 RAD

*Late Miocene

LITHOLOGIC DESCRIPTION

Central Pacific Basin

Core ID KK76-01-03 Sta. 10
 PCOD 09
 Lat., Long. 1° 5.976' S
 179° 29.312' E
 Water Depth 5391 m
 Logged By Au & Wenkam



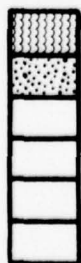
0-75 cm dark brown (10YR4/3)
 MINERAL-CLAY-DIATOM RICH RAD OOZE
 30-35% rad, 18-20% siliceous bioclastic,
 17-20% diatom, 15-18% clay, 10% aniso min

75-175 cm dark brown (10YR4/3)
 MINERAL-SILICEOUS BIOCLASTIC RICH CLAY
 58-60% clay, 20-25% siliceous bioclastic,
 10-12% aniso min, 5-10% iso min

175-1189 cm dark brown (10YR4/3 to 3/3)
 MINERAL-CLAY RICH DIATOM RAD OOZE
 18-40% rad, 3-35% diatom, 9-30% clay,
 2-20% aniso min, 3-6% iso min

Mottling

Very slight to moderate mottling throughout core; light yellowish brown (10YR6/4), very dark grayish brown (10YR3/2) and dark brown (10YR4/3).

KEY

SILICEOUS
 MINERAL CLAY

*Pliocene

LITHOLOGIC DESCRIPTION

Central Pacific Basin

KK76-01-03 Sta. 11

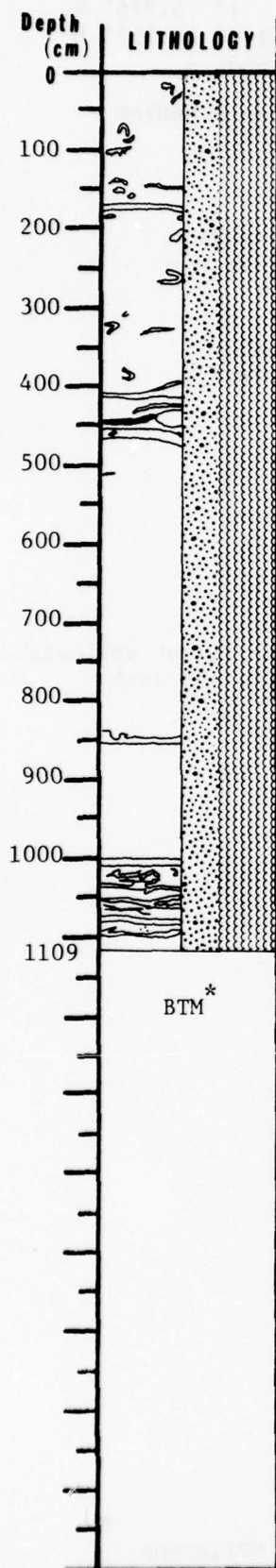
Core ID PCOD 10

Lat., Long. 0° 23.818' N

Water Depth 178° 57.777 W

5387 m

Logged By Au & Wenkam



0-175 cm dark brown (10YR4/3)
MINERAL-CLAY-DIATOM RICH SILICEOUS BIOCLASTIC RAD OOZE
25-30% rad, 22-30% siliceous bioclastic, 10-15% diatom, 12-25% clay, 5-18% aniso min, 3-5% iso min

175-225 cm dark brown (10YR4/3)
DIATOM-SILICEOUS BIOCLASTIC-RAD-MINERAL RICH CLAY
30% clay, 20% rad, 18% aniso min, 14% siliceous bioclastic, 10% diatom, 5% iso min

225-1109 cm brown (10YR5/3) to dark brown (10YR4/3)
MINERAL-CLAY-SILICEOUS BIOCLASTIC RICH DIATOM AND RAD OOZE
10-30% rad, 10-30% diatom, 11-39% siliceous bioclastics, 6-30% clay, 3-14% aniso min, 2-12% iso min

Mottling

Very slight to moderate mottling throughout core; brown to yellowish brown (10YR5/3 to 5/4) and very dark grayish brown (10YR3/2).

Layering

176-180 cm brown (10YR5/3)

400-406 cm yellowish brown (10YR5/4)
CLAY-MINERAL BEARING SILICEOUS BIOCLASTIC RICH DIATOM RAD OOZE

456-471 cm yellowish brown (10YR5/4)

1000-1006 cm

1027-1038 cm

1048-1053 cm

1066-1078 cm yellowish brown (10YR5/4)

MINERAL-CLAY BEARING RAD RICH SILICEOUS BIOCLASTIC DIATOM OOZE

1095-1102 cm yellowish brown (10YR5/4)

KEY

SILICEOUS

MINERAL CLAY

* Pliocene

LITHOLOGIC DESCRIPTION

Central Pacific Basin

KK76-01-03 Sta. 12

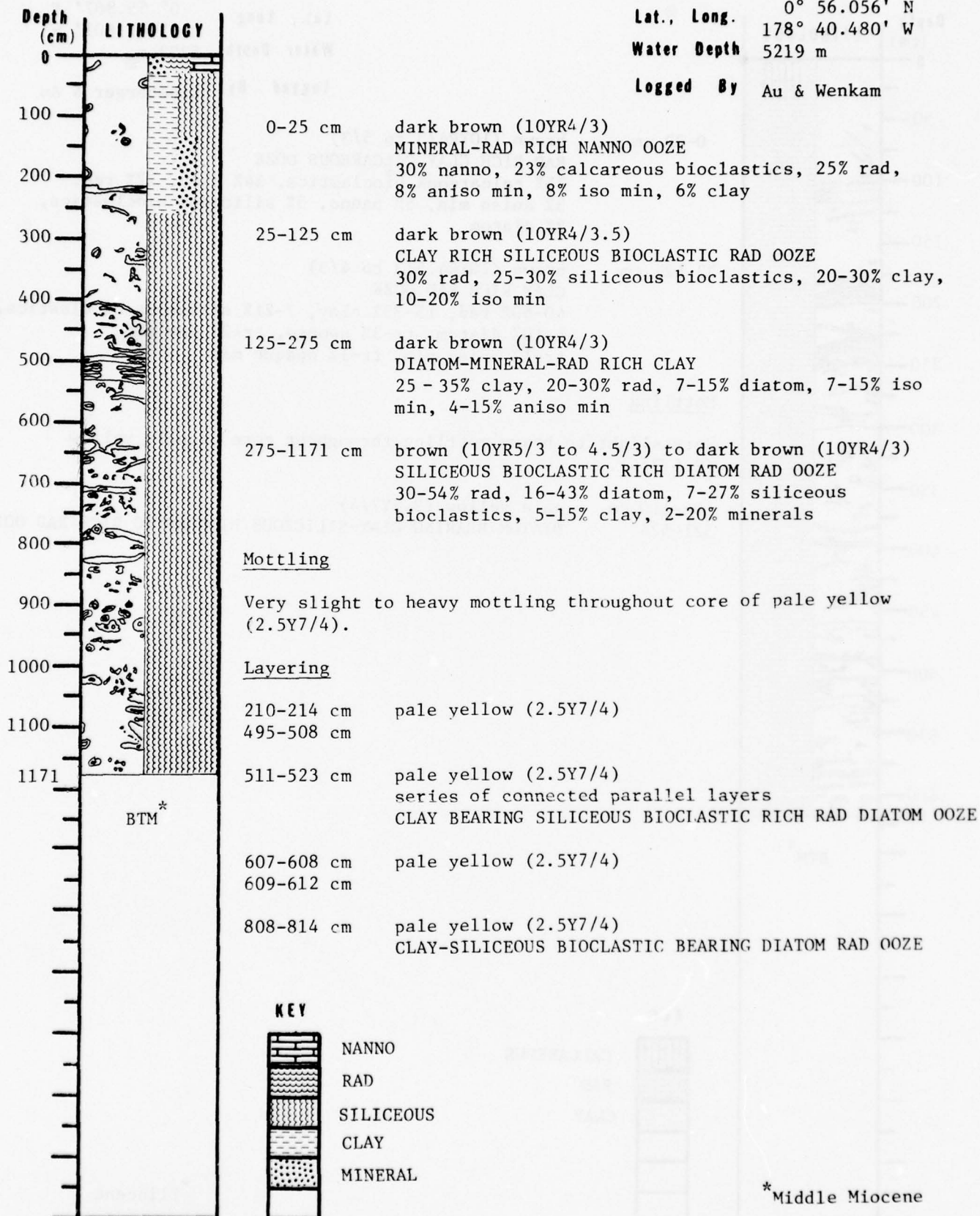
Core ID PCOD 11

Lat., Long. 0° 56.056' N

178° 40.480' W

Water Depth 5219 m

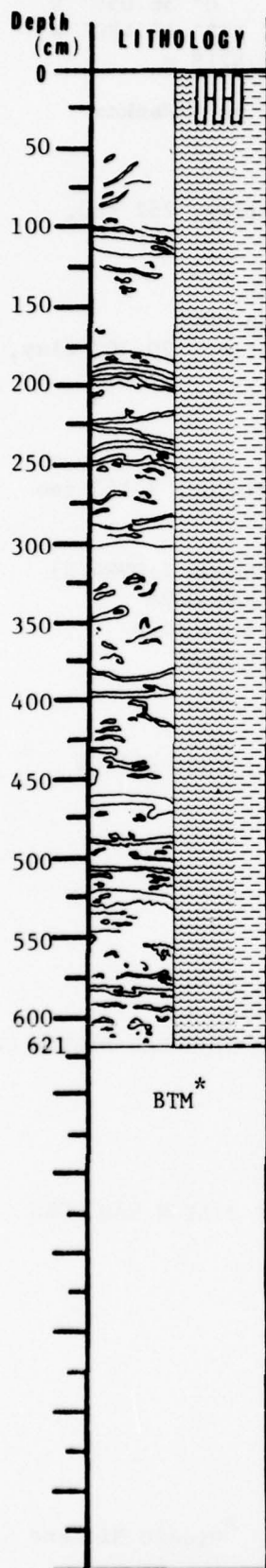
Logged By Au & Wenkam



LITHOLOGIC DESCRIPTION

Central Pacific Basin

Core ID KK76-01-03 Sta. 12
 PCOD 12
 Lat., Long. 0° 55.867' N
 178° 41.601' W
 Water Depth 5203 m
 Logged By Lineberger & Au

**KEY**

CAL CAREOUS

RAD

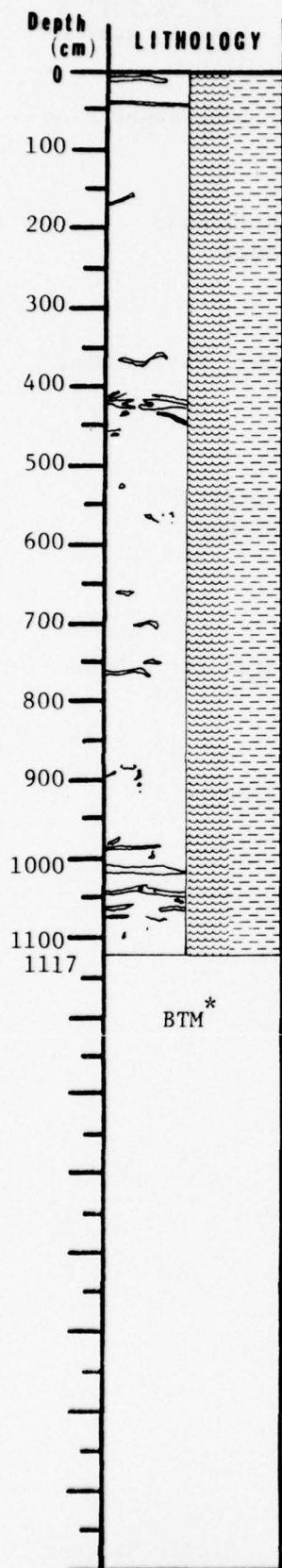
CLAY

*Pliocene

LITHOLOGIC DESCRIPTION

Central Pacific Basin

Core ID KK76-01-03 Sta. 13
 PCOD 13
 Lat., Long. 2° 40.089' N
 178° 45.093' W
 Water Depth 5419 m
 Logged By Lineberger & Au



- 0-25 cm brown (10YR4/3)
RAD CLAY
53% clay, 32% rad, 8% siliceous bioclastics,
3% diatom, 1% aniso min, 1% iso min
- 25-575 cm dark brown (10YR3/3) to brown (10YR4/3)
CLAY RAD OOZE
30-50% rad, 25-54% clay, 8-15% siliceous bioclas-
tics, 1-12% diatom, 1-3% aniso min, 1% iso min,
tr-1% sponge, tr-1% opaque min
- 575-825 cm brown (10YR4/3)
RAD RICH CLAY
59-79% clay, 10-25% rad, 5-10% siliceous bio-
clastics, 2-3% aniso min, 1% iso min, tr-1% diatom,
tr-1% opaque min, tr-1% sponge
- 825-1117 cm brown (10YR4/3 to 5/3)
CLAY RAD OOZE
36-54% rad, 25-35% clay, 10-25% siliceous bio-
clastics, 2-10% diatom, tr-2% aniso min, tr-2% sponge,
tr-1% iso min
- Mottling
 Very slight to heavy mottling scattered throughout core; colors
 range from brown (10YR3.5/3) to light yellowish brown (2.5Y6/4).
- 419-428 cm light yellowish brown (2.5Y6/4)
DIATOM BEARING RAD CLAY
- 0-35 cm disturbed

KEY

CLAY

RAD

* Pliocene

LITHOLOGIC DESCRIPTION

Central Pacific Basin

KK76-01-03 Sta. 14

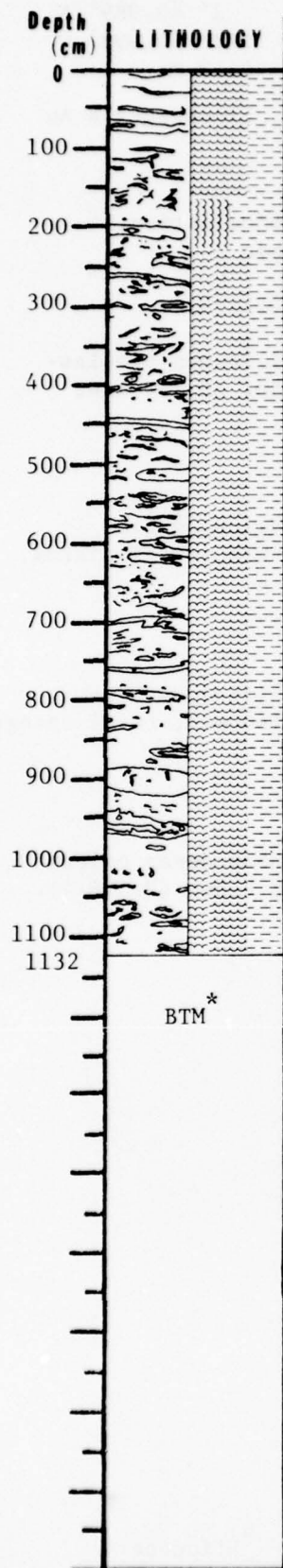
Core ID PCOD 14

Lat., Long. 2° 54.731' N

178° 30.847' W

Water Depth 5290 m

Logged By Lineberger & Au



0-170 cm brown (10YR4.5/3)
CLAY RICH RAD OOZE
50-57% rad, 10-30% clay, 10-20% siliceous
bioclastics, 7-10% diatom, 1% sponge

170-225 cm brown (10YR5/3)
CLAY SILICEOUS OOZE
60% siliceous bioclastics, 37% clay, 2% iso min,
1% rad

225-1132 cm brown (10YR5/3 to 4/2.5)
DIATOM-CLAY RICH RAD OOZE
57-73% rad, 7-20% siliceous bioclastics,
5-15% clay, 7-12% diatom, tr-3% sponge,
tr-1% iso min, tr-1% opaque min

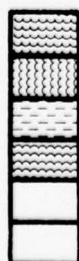
Mottling

Very slight to heavy mottling densely concentrated throughout
core; colors range from grayish brown (10YR5/2, 4/2) to
pale yellow (2.5Y7/4).

200-208 cm pale yellow (2.5Y7/4)
SPONGE DIATOM BEARING CLAY RAD OOZE

1126-1127 cm sediment sheared apart during coring

1127-1132 cm partial void; core catcher

KEY

RAD

SILICEOUS

CLAY

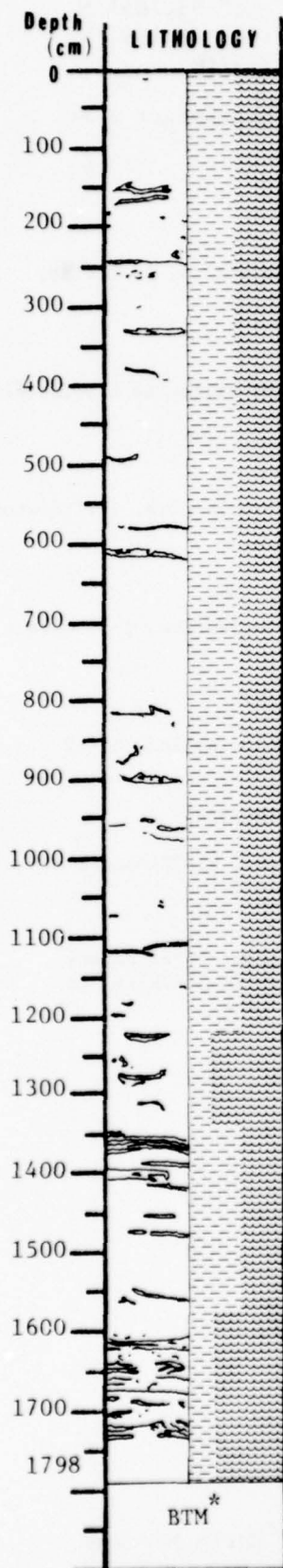
DIATOM

*Middle Miocene

LITHOLOGIC DESCRIPTION

Central Pacific Basin

Core ID KK76-01-03 Sta. 15
 PCOD 15
 Lat., Long. 02° 56.351' N
 178° 32.144' W
 Water Depth 5412 m
 Logged By Lineberger & Au



- 0-425 cm dark brown (10YR3/3) to dark grayish brown (10YR4/2)
 CLAY RAD OOZE
 40-47% rad, 37-45% clay, 5-10% siliceous bioclastics, 3-7% diatom,
 1% aniso min, tr-1% iso min, tr-1% opaque min
- 425-675 cm brown (10YR4/3) to dark grayish brown (10YR4/2)
 RAD RICH CLAY
 53-76% clay, 15-35% rad, 5-8% siliceous bioclastics, 1-3% aniso
 min, tr-2% diatom, tr-2% iso min, tr-2% opaque min
- 675-1225 cm dark grayish brown (10YR4/2) to brown (10YR5/3)
 CLAY RAD OOZE
 40-51% rad, 30-49% clay, 6-10% siliceous bioclastics, 1-7% diatom,
 tr-1% aniso min, tr-1% sponge, tr-1% iso min, tr-1% opaque min
- 1225-1368 cm brown (10YR4/2.5)
 CLAY RICH RAD OOZE
 47-54% rad, 25-35% clay, 10-15% siliceous bioclastics, 5-8%
 diatom, 1% sponge, tr-1% iso min
- 1368-1575 cm dark grayish brown (10YR4/2)
 CLAY RAD OOZE
 40-50% rad, 30-41% clay, 10-15% siliceous bioclastics, 4-7%
 diatom, tr-3% opaque min, tr-1% aniso min, tr-1% sponge
- 1575-1798 cm dark grayish brown (10YR4/2)
 CLAY RICH RAD OOZE
 49-55% rad, 25% clay, 10-15% siliceous bioclastics, 7-8% diatom,
 1% sponge, tr-2% opaque min, tr-1% aniso min, tr-1% iso min

Mottling

Very slight to heavy mottling scattered throughout core; colors range from dark grayish brown to light yellowish brown (10YR4/1.5, 5/3, 5/4, 6/4).

- 0-19 cm disturbed
 463-470 cm disturbed

KEY

RAD
 CLAY

* Quaternary

LITHOLOGIC DESCRIPTION

Central Pacific Basin

KK76-01-03 Sta. 16

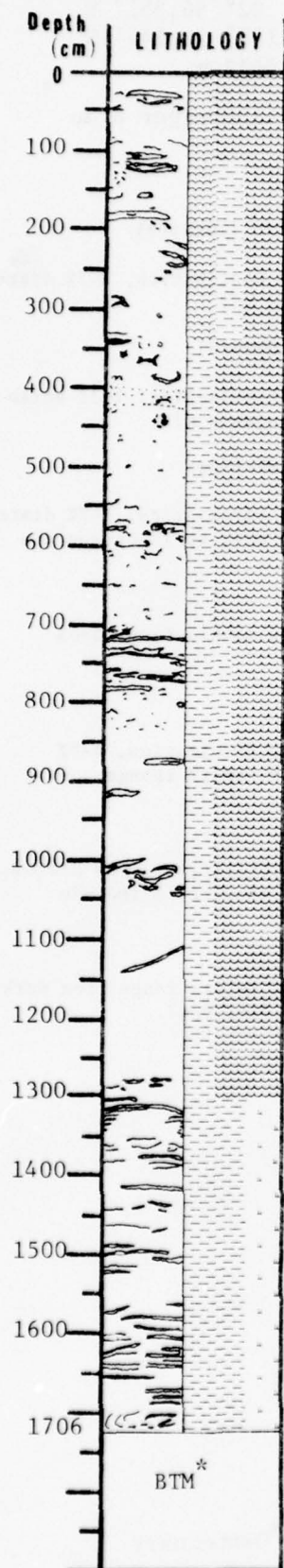
Core ID PCOD 16

Lat., Long. 4° 33.705' N

176° 33.109' W

Water Depth 5197 m

Logged By Lineberger & Au



0-105 cm	brown (10YR5/3) DIATOM RICH RAD OOZE 68-70% rad, 12% diatom, 10% siliceous bioclastics, 5-7% clay, 1% sponge
105-325 cm	brown (10YR4.5/3) DIATOM-CLAY RICH RAD OOZE 60-63% rad, 12-15% clay, 10-12% diatom, 10% siliceous bioclastics, 1% sponge
325-710 cm	brown (10YR4.5/3) CLAY RICH RAD OOZE 65-69% rad, 15-20% clay, 8-10% siliceous bioclastics, 2-7% diatom, tr-1% sponge, tr-1% aniso min
710-875 cm	brown (10YR4/3) RAD CLAY 44-54% clay, 40-50% rad, 2-5% siliceous bioclastics, 1-3% opaque min, tr-2% iso min, tr-1% diatom
875-1298 cm	brown (10YR4/3) to yellowish brown (10YR5/5) CLAY RICH RAD OOZE 67-78% rad, 12-20% clay, 7-10% siliceous bioclastics, tr-1% diatom
1298-1706 cm	dark brown (10YR3/3) to yellowish brown (10YR5/4) ZEOLITE CLAY 51-58% clay, 35-45% zeolite, tr-3% aniso min, tr-2% opaque min
Mottling Very slight to heavy mottling densely concentrated throughout core; colors range from dark brown to pale yellow (10YR4.5/3, 3/3, 4/2) to (7.5YR7/4) to (2.5Y7/4).	
722-735 cm	dark grayish brown (10YR4/2) SILICEOUS BIOCLASTIC BEARING CLAY RAD OOZE
73-80 cm	disturbed
1423-1424 cm	void
1436-1437 cm	void
1664-1678 cm	semi-lithified layer

KEY

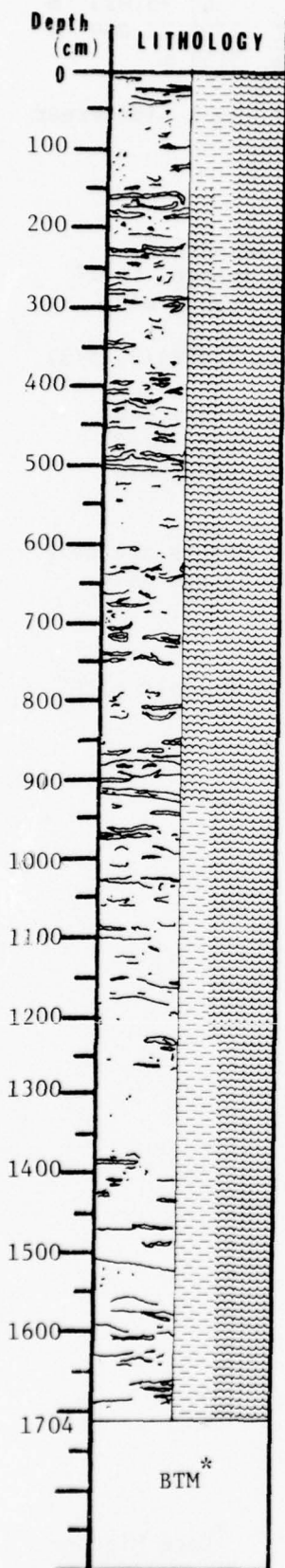
	RAD
	DIATOM
	CLAY
	ZEOLITE

* Early Miocene

LITHOLOGIC DESCRIPTION

Central Pacific Basin

Core ID KK76-01-03 Sta. 16
 PCOD 17
 Lat., Long. 4° 34.360' N
 176° 35.253' W
 Water Depth 5240 m
 Logged By Lineberger & Au

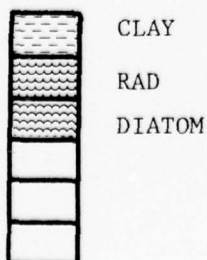


- 0-145 cm grayish brown (10YR5/2) to brown (10YR4/3)
 RAD CLAY
 38-45% clay, 37-45% rad, 10% siliceous bioclastics,
 3-4% diatom, tr-2% aniso min, tr-1% iso min
- 145-280 cm light brownish gray (10YR6/2) to gray (10YR5/1)
 DIATOM-CLAY RICH RAD OOZE
 51-72% rad, 12-25% clay, 10-15% siliceous bioclas-
 tics, 10-12% diatom, tr-1% aniso min, tr-1% iso min,
 tr-1% opaque min, tr-1% sponge
- 280-925 cm light brownish gray (10YR6/2) to grayish brown
 (10YR5/2)
 DIATOM RICH RAD OOZE
 59-72% rad, 10-15% siliceous bioclastics, 8-12%
 diatom, 8-10% clay, tr-2% sponge, tr-1% aniso min,
 tr-1% iso min
- 925-1225 cm pale brown (10YR6/3) to brown (10YR5/3)
 CLAY RICH RAD OOZE
 51-64% rad, 15-20% clay, 15% siliceous bioclastics,
 3-10% diatom, 1% sponge, tr-1% aniso min
- 1225-1704 cm pale brown (10YR6/3)
 DIATOM RICH CLAY RAD OOZE
 40-51% rad, 20-30% clay, 10-15% diatom, 10-15%
 siliceous bioclastics, 1% sponge, tr-1% aniso min,
 tr-1% iso min

Mottling

Very slight to heavy mottling scattered densely throughout core;
 colors of white to pale yellow (2.5Y8/3), brown (10YR4/3) and
 very dark gray (10YR3/1).

- 162-194 cm white to pale yellow (2.5Y8/3)
 708-748 cm SPONGE-CLAY-DIATOM BEARING SILICEOUS BIOCLASTIC
 RICH RAD OOZE

KEY

* Middle Miocene

LITHOLOGIC DESCRIPTION

Central Pacific Basin

KK76-01-03 Sta. 16

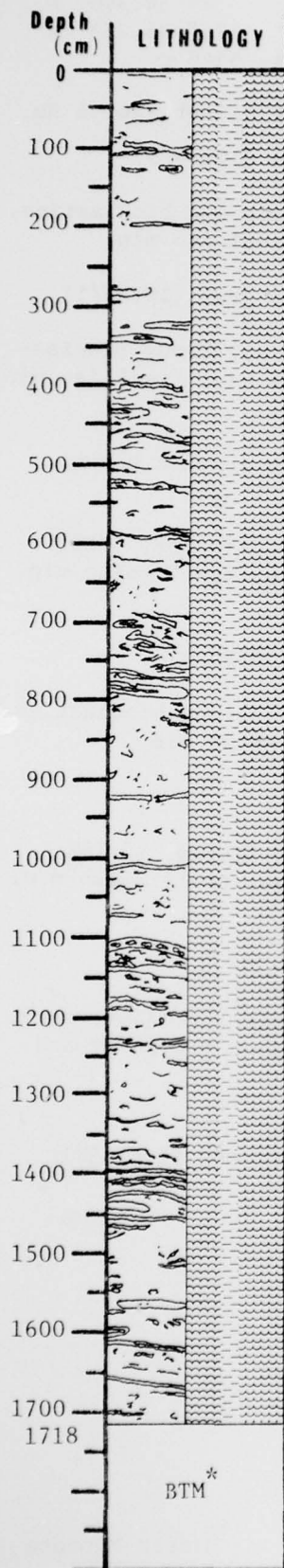
Core ID PCOD 18

Lat., Long. 4° 35.023' N

176° 37.089' W

Water Depth 5151 m

Logged By Au & Lineberger



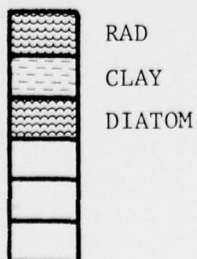
0-175 cm brown (10YR4/3 to 5/3)
DIATOM-CLAY RICH RAD OOZE
42-55% rad, 15-30% siliceous bioclastics,
12-20% clay, 5-15% diatom, 1-2% sponge, tr-1%
aniso min, tr-1% iso min, tr-1% opaque min

175-1718 cm grayish brown (10YR5/2) to brown (10YR4/3, 5/3)
CLAY RICH RAD-DIATOM OOZE
25-47% diatom, 25-47% rad, 10-15% siliceous
bioclastics, 8-15% clay, 1-2% sponge, tr-2%
sio min, tr-1% aniso min, tr-1% opaque min

Mottling

Very slight to heavy mottling throughout core; colors are pale
yellow (2.5Y7/4) to light brownish gray (10YR6/2) and pale
brown (10YR6/3).

1562-1570 cm pale yellow (2.5Y7/4)
SPONGE BEARING CLAY-SILICEOUS BIOCLASTIC RICH
DIATOM-RAD OOZE

KEY

* Late Miocene

LITHOLOGIC DESCRIPTION

Hawaiian Islands

KK76-08-06 Sta. 01

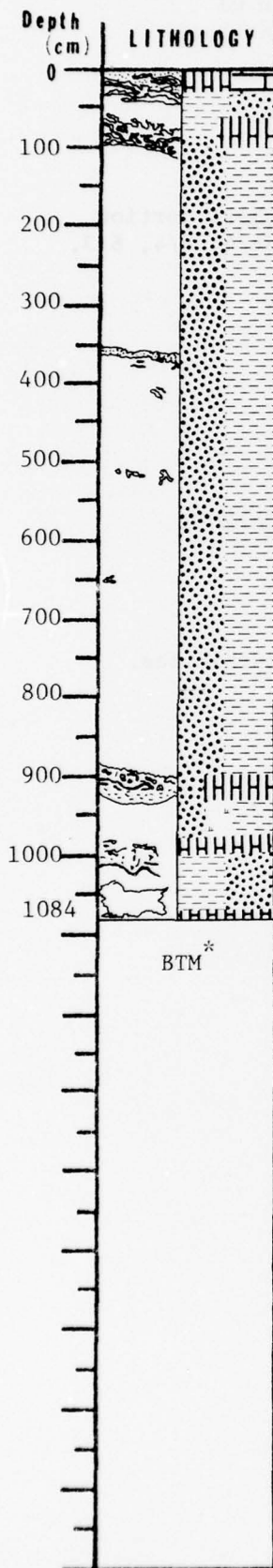
Core ID PCOD 01

Lat., Long. 22° 22.350' N

165° 30.855' W

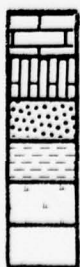
Water Depth 4641 m

Logged By Lineberger & Mato



0-22 cm	white (10YR8/1) CALCAREOUS BIOCLASTIC RICH FORAM OOZE 51% foram, 45% calcareous bioclastics, 1% nanno
22-77 cm	brown (10YR4/4) to dark yellowish brown (10YR4/4) MINERAL CLAY 54% clay, 35% aniso min, 5% opaque min, 5% zeolite, 1% iso min
77-84 cm	light yellowish brown (10YR6/4) CLAY RICH CALCAREOUS OOZE 46% calcareous bioclastics, 20% clay, 20% foram, 5% nanno, 2% aniso min, 2% discoaster, 2% zeolite, 1% opaque min
84-93 cm	brown (10YR5/3 to 5.5/3) MINERAL RICH CALCAREOUS OOZE 40% foram, 32% calcareous bioclastics, 15% aniso min, 7% clay, 3% zeolite, 1% nanno, 1% opaque min
93-885 cm	brown (10YR4/3) MINERAL CLAY 20-57% clay, 25-46% aniso min, 10-25% opaque min, tr-15% zeolite, 0-5% iso min
885-900 cm	very pale brown (10YR6.5/3) CLAY MINERAL SAND 38% clay, 27% aniso min, 10% opaque min, 8% calcareous bioclas- tics, 7% discoaster, 6% zeolite, 2% iso min, 2% nanno
900-917 cm	pale brown (10YR6/3) to brownish yellow (10YR6/5) MINERAL RICH CALCAREOUS OOZE 30-60% calcareous bioclastics, 12-15% aniso min, 10-15% clay, tr-24% nanno, 5-6% zeolite, 3-6% opaque min, 1-3% iso min, 0-9% discoaster, 0-8% foram
917-985 cm	brown (10YR4/3) ZEOLITE RICH MINERAL CLAY 32-35% clay, 30-35% aniso min, 15-18% zeolite, 15% opaque min, 2-3% iso min
985-1003 cm	brown (10YR6/3) to light gray (10YR7/2) CALCAREOUS OOZE 45-52% calcareous bioclastics, 3-20% foram, 2-15% nanno, 6-10% aniso min, 2-10% zeolite, 7-8% clay, 5-8% opaque min, 1% iso min
1003-1083 cm	brown (10YR4/3) CLAY MINERAL SAND 35% aniso min, 33% clay, 20% zeolite, 10% opaque min, 2% iso min
1083-1084 cm	pale brown (10YR6/3) CALCAREOUS OOZE 55% calcareous bioclastics, 20% foram, 7% clay, 5% aniso min, 5% opaque min, 5% zeolite

KEY



FORAM

CALCAREOUS

MINERAL

CLAY

ZEOLITE

*Pleistocene (N22)

KK76-08-06 Sta. 01
PCOD 01
(continued)

Mottling

Very slight to heavy mottling concentrated in uppermost and lowermost portion of core; colors range from very dark grayish brown to white (10YR6/4, 4/4, 6/3, 5/3, 4/3, 3/3, 7/2, 3/2, 8/1, 4/1) to (7.5YR4/4).

25-75 cm	brown (7.5YR4/4) ZEOLITE BEARING MINERAL CLAY
84-85 cm	light yellowish brown (10YR6/4) ZEOLITE-CLAY BEARING MINERAL RICH FORAM OOZE
997-1001 cm	brown (10YR5/3) to pale brown (10YR6/3)
1003-1083 cm	NANNO-ZEOLITE-CLAY BEARING MINERAL-FORAM RICH CALCAREOUS BIOCLASTIC OOZE

Layering

Layering show graded bedding and are slightly mottled, probably turbidites.

0-22 cm	white (10YR8/1) CALCAREOUS OOZE
84-93 cm	brown (10YR5/3)
351-359 cm	very dark gray (10YR3/1)
1038-1039 cm	pale brown (10YR6/3)
1003-1083 cm	disturbed; flow-in during coring

LITHOLOGIC DESCRIPTION

East of Hess Rise

KK76-08-06 Sta. 8

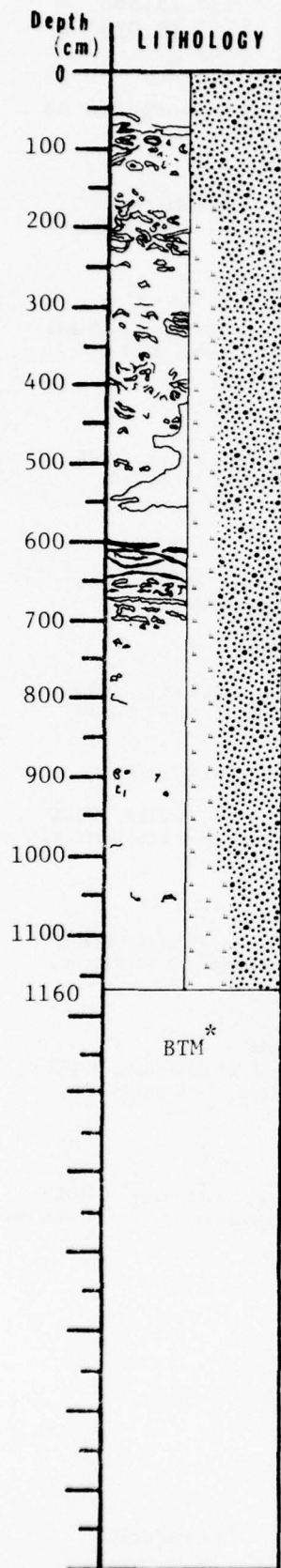
Core ID PCOD 02

Lat., Long. 32° 30.863' N

175° 51.398' E

Water Depth 5207 m

Logged By Lineberger & Mato



0-175 cm brown (10YR4/3)
MINERAL CLAY
57-61% clay, 35% aniso min, 1-5% opaque min,
tr-2% siliceous bioclastics, tr-1% iso min

175-1025 cm brown (10YR4/3 to 7.5YR3.5/3)
ZEOLITE BEARING MINERAL CLAY
58-74% clay, 15-35% aniso min, tr-10% zeolite,
tr-1% opaque min

1025-1160 cm brown (7.5YR3.5/3)
ZEOLITE-MINERAL RICH CLAY
64-67% clay, 20% aniso min, 12-15% zeolite

Mottling

Very slight to heavy mottling throughout core; colors range from very dark gray through brownish yellow (10YR6/8, 5/8, 6/6, 6/5, 6/4, 5/4, 4/4, 5/3, 4/3, 3/2, 3/1) and (7.5YR6/4).

63-70 cm light brown (7.5YR6/4)
SILICEOUS BIOCLASTIC BEARING MINERAL CLAY

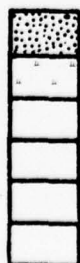
315-329 cm yellowish brown (10YR5/8)
329-335 cm brownish yellow (10YR6/8)
ZEOLITE BEARING MINERAL CLAY

Layering

622-624 cm brown (10YR4/2.5)

440-560 cm disturbed; flow-in during coring

KEY



MINERAL CLAY

ZEOLITE

* Middle Miocene

LITHOLOGIC DESCRIPTION

East of Hess Rise

KK76-08-06 Sta. 09

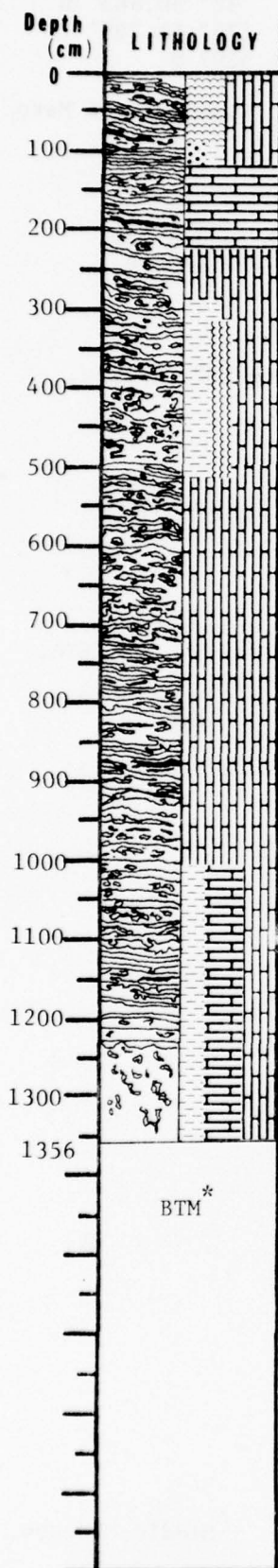
Core ID PCOD 03

Lat., Long. 33° 15.560' N

175° 18.015' E

Water Depth 4187 m

Logged By Lineberger & Au



0-93 cm light gray (10YR7/2) to pale brown (10YR6/3)

DIATOM RICH CALCAREOUS OOZE

25-48% nanno, 25-30% calcareous bioclastics, 4-15% diatom, 5-15% foram, 5-7% clay, 3-6% aniso min, 1-7% rad, 1-7% siliceous bioclastics

93-138 cm brown (10YR5/3) to light gray (10YR7/2)

MINERAL-CLAY RICH CALCAREOUS OOZE

20-35% clay, 15-19% calcareous bioclastics, 13-25% nanno, 10-20% aniso min, 4-15% siliceous bioclastics, 5-10% foram, 3-5% rad, tr-3% opaque min

138-239 cm brown (10YR5/3) to white (10YR8/2)

NANNO OOZE

53-93% nanno, 1-15% calcareous bioclastics, 2-5% foram, tr-8% siliceous bioclastics, tr-6% clay, tr-5% diatom, tr-5% rad, tr-3% aniso min

239-252 cm light yellowish brown (10YR6/4)

CLAY RICH CALCAREOUS OOZE

30% nanno, 20% clay, 18% calcareous bioclastics, 9% siliceous bioclastics, 7% aniso min, 7% foram, 4% diatom, 3% rad

252-285 cm brown (10YR5/3) to very pale brown (10YR7/3)

CALCAREOUS OOZE

40-62% nanno, 15-21% calcareous bioclastics, 7-10% clay, 5-10% foram, 5% aniso min, 3-4% siliceous bioclastics, tr-5% diatom, tr-3% rad

285-313 cm yellowish brown (10YR5.5/4) to light brownish gray (10YR6/2)

CLAY RICH CALCAREOUS OOZE

20-24% nanno, 20-24% calcareous bioclastics, 20-22% clay, 7-10% aniso min, 5-10% foram, 5-8% diatom, 5-8% siliceous bioclastics, 4% rad, 1% opaque min

313-393 cm brown (10YR5/3) to white (10YR8/1)

CLAY-BIOGENIC SILICA RICH CALCAREOUS OOZE

25-52% nanno, 10-20% calcareous bioclastics, 6-22% clay, 5-10% foram, 4-7% siliceous bioclastics, 3-7% aniso min, 3-7% diatom, 3-7% rad, tr-1% opaque min

393-507 cm brown (10YR5/3) to light gray (10YR7/2)

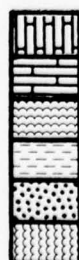
SILICEOUS BIOCLAST-CLAY RICH CALCAREOUS OOZE

17-35% nanno, 15-30% clay, 10-23% calcareous bioclastics, 5-10% rad, 4-15% siliceous bioclastics, 5-8% diatom, 3-8% aniso min, 5-7% foram

507-1011 cm brown (10YR5/3) to light gray (10YR7/1)

CALCAREOUS OOZE

25-77% nanno, 10-30% calcareous bioclastics, 3-20% clay, 2-10% foram, tr-12% aniso min, 1-10% siliceous bioclastics, tr-7% diatom, tr-7% rad

KEY

CALCAREOUS

NANNO

DIATOM

CLAY

MINERAL

SILICEOUS

*Pliocene

KK76-08-06 Sta. 09
PCOD 03
(continued)

1011-1356 cm brown (10YR5/2.5) to gray (2.5YR5/1)
CLAY RICH CALCAREOUS BIOCLASTIC-NANNO OOZE
25-79% nanno, 20-45% calcareous bioclastics, 3-15% clay,
2-15% aniso min, 1-10% foram, tr-3% diatom, tr-3% rad

Mottling

Very slight to heavy mottling throughout core; colors range from brown through white (10YR6/6, 5/4, 6/4, 5/3, 6/3, 7/3, 4/2, 5/2, 6/2, 7/2, 8/2, 4/1, 6/1, 7/1) to (7.5YR7/2) to (2.5YR6/3).

13-18 cm brown (10YR5/3)
MINERAL-FORAM-RAD BEARING DIATOM-CLAY RICH CALCAREOUS OOZE

390-398 cm dark grayish brown (10YR4/2)
DIATOM-RAD-FORAM BEARING MINERAL RICH CLAY CALCAREOUS OOZE

797-805 cm light yellowish brown (10YR6/4)
820-826 cm very pale brown (10YR7/3)
836-844 cm light brownish gray (10YR6/2)
850-868 cm white (10YR8/1)
DIATOM-RAD-MINERAL-CLAY-SILICEOUS BIOCLAST BEARING CALCAREOUS OOZE

1089-1091 cm black (10YR2.5/1)
1128 cm very pale brown (10YR6.5/3)
RAD-FORAM BEARING MINERAL CLAY RICH NANNO-CALCAREOUS BIOCLASTIC OOZE

1142-1146 cm light grayish brown (2.5Y6/2)
FORAM-DISCOASTER-MINERAL-CLAY BEARING CALCAREOUS BIOCLASTIC RICH NANNO OOZE

1215-1356 cm white (10YR8/2) to pale brown (10YR6/2.5)
FORAM-MINERAL-CLAY BEARING DISCOASTER RICH NANNO OOZE

Layering

32-35 cm grayish brown (10YR5/2)
MINERAL-RAD-FORAM-CLAY BEARING CALCAREOUS BIOCLAST NANNO OOZE

0-58 cm disturbed; very soft sediments

1215-1356 cm disturbed; apparent flow-in during coring operation

1236-1238 cm void; sediment sheared apart during coring operation

LITHOLOGIC DESCRIPTION

South of Shatsky Rise

KK76-08-06 Sta. 10

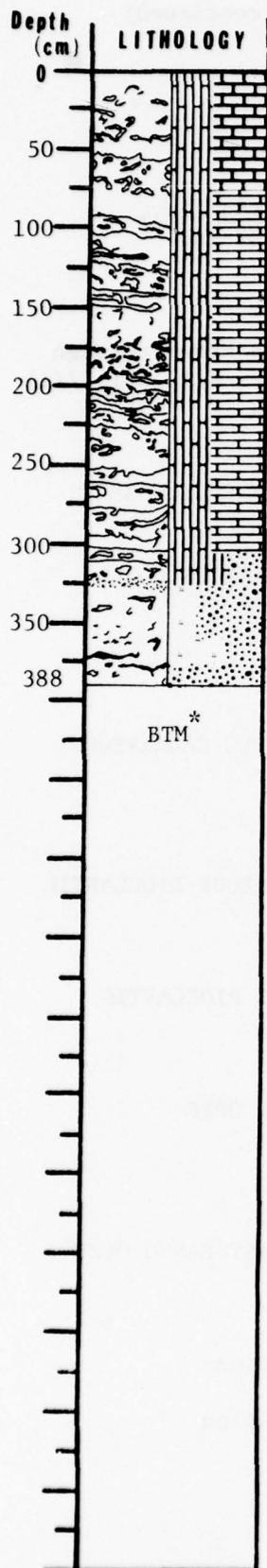
Core ID PCOD 04

Lat., Long. 33° 55.489' N

173° 59.804' E

Water Depth 3998 m

Logged By Lineberger



- 0-54 cm very pale brown (10YR7.5/3)
CALCAREOUS BIOCLAST RICH FORAM NANNO OOZE
31-46% nanno, 20-35% foram, 15% calcareous bioclastic, 10% clay,
7% aniso min
- 54-263 cm pale brown (10YR6/3) to very pale brown (10YR7/3)
CALCAREOUS BIOCLAST RICH NANNO OOZE
46-74% nanno, 10-20% calcareous bioclastics, 4-15% clay,
2-15% foram, 3-8% aniso min, 0-7% discoaster, tr-1% iso min
- 263-314 cm brown (10YR5/3) to very pale brown (10YR7/3)
CALCAREOUS BIOCLAST RICH DISCOASTER NANNO OOZE
35-45% nanno, 30% discoaster, 15-20% calcareous bioclastics,
4-7% clay, 3-4% aniso min, 1-2% foram, tr-1% iso min
- 314-324 cm dark brown (10YR4/2.5)
MINERAL-CLAY RICH CALCAREOUS OOZE
23-25% clay, 20-25% calcareous bioclastics, 15-25% nanno, 12-15%
aniso min, 10-15% discoaster, 2-5% iso min, 1-2% foram
- 324-372 cm very dark grayish brown (10YR3/2.5)
ZEOLITE BEARING MINERAL CLAY
44-45% clay, 40% aniso min, 5-9% zeolite, 5-7% iso min, 1-2%
opaque min
- 372-381 cm dark grayish brown (10YR4/2.5)
CLAY-MINERAL RICH ZEOLITE SAND
40% zeolite, 25% aniso min, 25% clay, 5% iso min, 5% opaque min
- 381-388 cm brown (10YR5/2.5)
MINERAL CLAY
40% clay, 33% aniso min, 10% zeolite, 9% opaque min

Mottling

Very slight to heavy mottling throughout core; colors range from very dark gray through white (10YR6/5, 7/4, 6/4, 5/4, 8/3, 7/3, 6/3, 5/3, 8/2, 7/2, 6/2, 6/1, 4/1, 3/1)

KEY

NANNO
FORAM NANNO
CALCAREOUS
ZEOLITE
MINERAL CLAY

* Pliocene (N21)

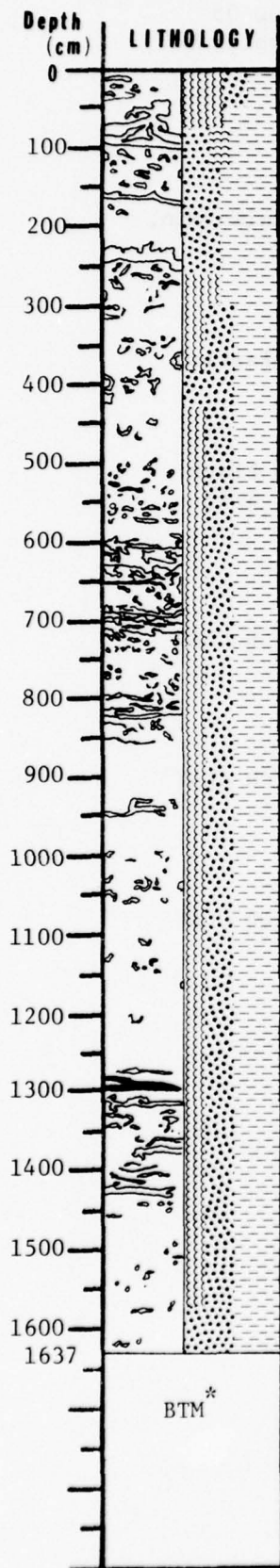
LITHOLOGIC DESCRIPTION

Hess Rise

KK76-08-06 Sta. 11

Core ID PCOD 5
 Lat., Long. 33° 24.858' N
 172° 25.988' E
 Water Depth 5019 m

Logged By Lineberger



- 0-44 cm yellowish brown (10YR5/4)
 CLAY RICH MINERAL BIOGENIC SILICA OOZE
 28% aniso min, 23% clay, 21% diatom, 12% siliceous bioclastic,
 11% rad, 1% volcanic glass, 1% iso min, 1% opaque min
- 44-70 cm dark yellowish brown (10YR4/4)
 SILICEOUS BIOCLASTIC RICH CLAY
 56% clay, 30% siliceous bioclastic, 10% diatom, 6% aniso min,
 5% rad, 1% iso min, 1% opaque min
- 70-125 cm dark brown (10YR3.5/3 to 4/3)
 DIATOM-MINERAL RICH CLAY
 53% clay, 15% aniso min, 15% diatom, 7% siliceous bioclastic,
 5% rad, 3% iso min, 1% opaque
- 125-240 cm brown (10YR5/3) to dark brown (10YR4/3)
 MINERAL RICH CLAY
 41-64% clay, 20-30% aniso min, 7-10% siliceous bioclastic,
 4-10% diatom, 2-5% rad, 2% iso min
- 240-298 cm brown (10YR4.5/3)
 SILICEOUS BIOCLASTIC RICH CLAY
 66% clay, 15% siliceous bioclastic, 10% aniso min, 4% diatom,
 3% rad
- 298-335 cm dark yellowish brown (10YR4/3.5)
 SILICEOUS BIOCLASTIC MINERAL CLAY
 40% clay, 30% aniso min, 15% siliceous bioclastic, 9% diatom,
 3% rad, 2% iso min, 1% opaque min
- 335-368 cm dark brown (10YR4.5/3)
 MINERAL RICH CLAY BIOGENIC SILICA OOZE
 30% clay, 20% siliceous bioclastic, 15% aniso min, 15% diatom,
 15% rad, 2% iso min, 1% opaque min, 1% sponge
- 368-410 cm dark yellowish brown (10YR4/4)
 MINERAL RICH CLAY
 68% clay, 15% aniso min, 9% siliceous bioclastic, 3% rad,
 2% diatom, 1% iso min
- 410-985 cm dark reddish brown (5YR3/4) to dark yellowish brown (10YR4/4)
 MINERAL RICH BIOGENIC SILICA CLAY
 34-50% clay, 15-25% aniso min, 12-20% siliceous bioclastic,
 6-15% rad, 2-12% diatom, 1-2% iso min, tr-2% sponge, tr-2%
 opaque min
- 985-1375 cm brown (10YR4/3) to dark brown (7.5YR4/4)
 SILICEOUS BIOCLASTIC-MINERAL RICH CLAY
 41-61% clay, 15-20% aniso min, 10-20% siliceous bioclastic,
 4-10% rad, 3-10% diatom, tr-1% iso min, tr-1% opaque min

KEY

BIOGENIC SILICA

CLAY

MINERAL

DIATOM

* Quaternary (?)

KK76-08-06 Sta. 11
PCOD 05
(continued)

- 1375-1575 cm brown (10YR4/3)
MINERAL RICH CLAY BIOGENIC SILICA OOZE
29-46% clay, 15-25% siliceous bioclastic, 13-20% aniso min,
8-12% rad, 8-12% diatom
- 1575-1637 cm brown (10YR4/3)
MINERAL RICH CLAY
70% clay, 25% aniso min, 1% rad, 1% siliceous bioclastic

Mottling

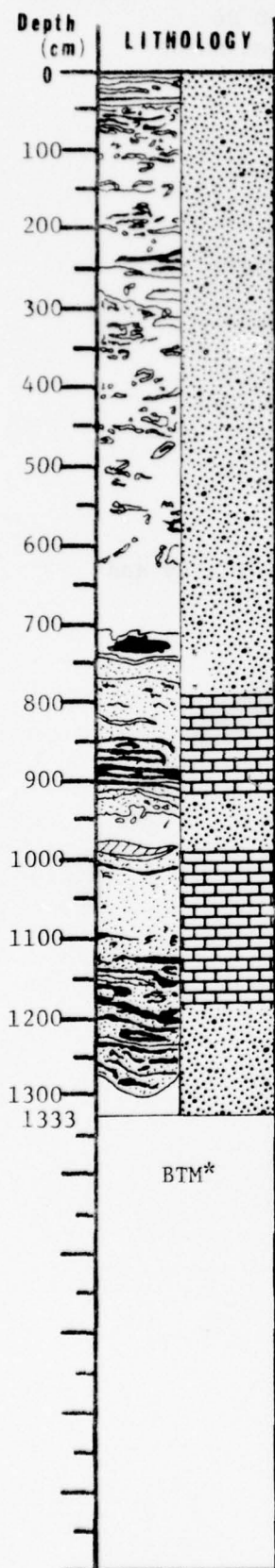
Very slight to heavy mottling throughout core; very pale brown to black
(10YR7/4, 6/4, 5/4, 5/5, 6/6, 3/2, 2.5/1) to (7.5YR6/6, 5/6, 5/8, 4/4).

- 600-609 cm yellowish brown (10YR5.5/4)
611-637 cm
711-717 cm dark brown (10YR3.5/3)
DIATOM-RAD BEARING SILICEOUS BIOCLASTIC-MINERAL RICH CLAY
- 726-737 cm yellowish brown (10YR5/4)
825-829 cm strong brown (7.5YR5/8)
1518-1519 cm light yellowish brown (10YR6/4)
DIATOM BEARING RAD-SILICEOUS BIOCLASTIC-MINERAL RICH CLAY
- 609-611 cm reddish brown (7.4YR6/6)
611-637 cm light yellowish brown (10YR6/4)
739-829 cm dark brown (7.5YR4/4)
DIATOM-RAD-SILICEOUS BIOCLASTIC BEARING MINERAL RICH CLAY
- 296 cm black pebble found, .5 cm diameter
559-562 cm large Mn nodule found (4 x 3 x 3 cm)
1365 cm Mn nodule 4 mm diameter found
1519-1520 cm rock fragment found, .8 cm long

A-51 LITHOLOGIC DESCRIPTION

Emperor Seamounts

Core ID KK76-08-06 Sta. 12
PCOD 06
Lat., Long. 32° 28.304' N
171° 40.699' E
Water Depth 5302 m
Logged By Lineberger, Au & Mato



- 0-725 cm dark brown (10YR4/3) to yellowish brown (10YR5/4)
MINERAL CLAY
56-73% clay, 25-35% aniso min, tr-3% opaque min, tr-3% siliceous bioclastics, 0-6% rad, 0-2% diatom, 0-1% iso min
- 725-770 cm dark brown (10YR4/3) to yellowish brown (10YR5/4)
ZEOLITE RICH MINERAL CLAY
46-73% clay, 20-40% aniso min, 5-20% zeolite, 1-4% opaque min, tr-1% iso min
- 770-935 cm dark brown (10YR3/3) to white (10YR8/1)
CALCAREOUS OOZE
91-98% calcareous bioclastics, tr-5% aniso min, tr-2% clay, 0-2% foram, tr-1% opaque min
- 935-986 cm yellowish brown (10YR5/4)
MINERAL CLAY
50% clay, 30% aniso min, 15% opaque min, 5% iso min
- 986-1185 cm pale brown (10YR5.5/3) to very pale brown (10YR7/3)
CALCAREOUS OOZE
86-93% calcareous bioclastics, 5-7% clay, tr-3% aniso min, tr-2% zeolite
- 1185-1235 cm brown (10YR4.5/3)
MINERAL CLAY
50-62% clay, 30-40% aniso min, 5-8% opaque min, 1% iso min, tr-2% zeolite
- 1235-1289 cm brown (10YR4.5/3)
CALCAREOUS OOZE
88% calcareous bioclastics, 2-6% foram, 2-4% clay, 0-5% zeolite, tr-1% aniso min
- 1289-1333 cm dark brown (10YR3.5/3)
MINERAL CLAY
48-52% clay, 30% aniso min, 10-15% opaque min, 2-5% zeolite, 2% iso min

Mottling

Very slight to heavy mottling throughout core; colors range from black to very pale brown (10YR6/8, 5/8, 6/6, 5/5, 7/4, 6/4, 5/4, 4/4, 6/3, 5/3, 4/3, 3/3, 3/2, 2.5/1).

- 172-180 cm pale brown (10YR6/3)
282-289 cm very dark grayish brown (10YR3/2)
330-334 cm
417-422 cm brown (10YR5/3)
1005-1006 cm brown (10YR4/3)
DIATOM-RAD BEARING MINERAL CLAY

KEY



MINERAL CLAY
CALCAREOUS
ZEOLITE

* Middle Miocene (?)

KK76-08-06 Sta. 12

PCOD 06

(continued)

Layering

- 984-986 cm yellowish brown (10YR5/5) fine-grained 2-cm-thick layer
CLAY-ZEOLITE BEARING CALCAREOUS OOZE
- 1002-1003 cm brown (10YR4/3) fine-grained 1-cm-thick layer
MINERAL BEARING CLAY RICH CALCAREOUS OOZE
- 348-350 cm very soft pocket of sediments
- 671-672 cm black pebble (Mn nodule?) found 1.5 x 1.5 cm
- 716-724 cm soupy sediments; large rock found, 7 x 1.5 cm
724 cm sediment texture changes from clay size to mixture of clay and
black sand grains
- 775-777 cm rock found; 2 x 1 cm
- 931-940 cm white (10YR8/1)
rounded pebble size fragments found (beach sand?)
- 1059-1209 cm very dark grayish brown (10YR3.5/2.5) mud lumps
ZEOLITE-MINERAL RICH CLAY

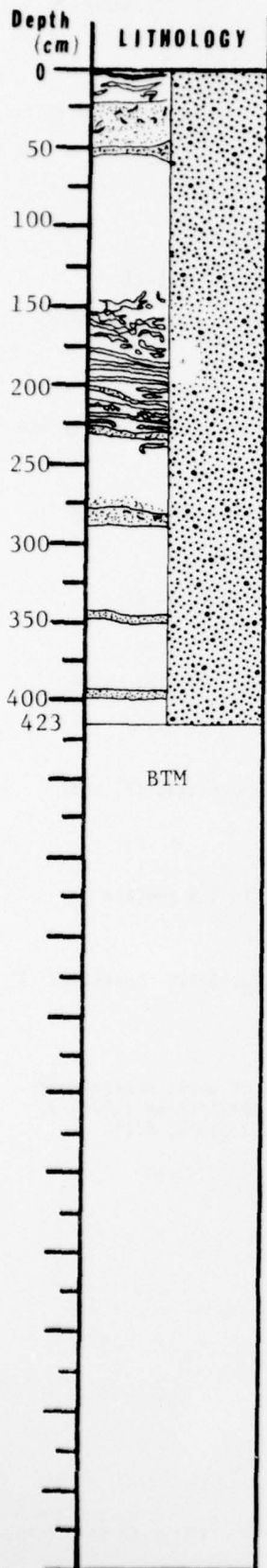
A-53
LITHOLOGIC DESCRIPTION

Hess Rise

KK76-08-06 Sta. 13

Core ID PCOD 07
Lat., Long. 32° 12.733' N
174° 17.175' E
Water Depth 5404 m

Logged By Lineberger & Mato



- 0-170 cm black (7.5YR2.5/0) to dark yellowish brown (10YR4/4)
MINERAL CLAY
30-55% clay, 25-50% aniso min, 7-15% opaque min, 0-7% zeolite,
tr-7% iso min
- 170-198 cm dark yellowish brown (10YR3/4) to dark brown (7.5YR3/2)
ZEOLITE RICH CLAY MINERAL SAND
35-40% aniso min, 31-36% clay, 15-30% zeolite, 8-12% opaque min,
tr-2% iso min
- 198-423 cm very dark gray brown (10YR3/2.5) to dark brown (10YR3/3)
CLAY MINERAL SAND
25-49% clay, 25-46% aniso min, 12-40% opaque min, 1-7% zeolite,
1-2% iso min

Mottling

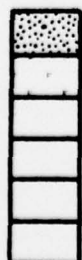
Slight to moderate mottling concentrated in uppermost and middle portions of core; colors range from black to dark yellowish brown (10YR5/4, 4/4, 2.5/1) to (7.5YR3/2).

- 150-170 cm dark brown (7.5YR3/2) to dark yellowish brown (10YR4/4)
200-221 cm ZEOLITE BEARING CLAY MINERAL SAND

Layering

- 55-56 cm dark yellowish brown (10YR4/4); graded
ZEOLITE RICH MINERAL CLAY
- 188-190 cm yellowish brown (10YR5/3)
CLAY RICH ZEOLITE MINERAL SAND
- 190-192 cm olive (5Y5/4) to olive gray (5Y4/2)
ZEOLITE BEARING MINERAL SAND
- 192-194 cm yellowish brown (10YR5/4)
ZEOLITE RICH CLAY MINERAL SAND
- 222-228 cm very dark grayish brown (10YR3/2)
ZEOLITE RICH CLAY MINERAL SAND
- 283-290 cm dark brown (10YR3/3)
ZEOLITE RICH CLAY MINERAL SAND
- 20-48 cm slightly laminated
170-180 cm many laminations, black
220-222 cm many very fine-grained laminations, black
- 0-8 cm Mn nodule found; black (7.5YR2.5/0)
dimensions 5.5 x 5.5 x 7.5 cm
- 0 cm black (7.5YR2.5/0) top of Mn nodule site
MINERAL BEARING CLAY
- 8 cm black (7.5YR2.5/0) bottom of Mn nodule site
ZEOLITE BEARING MINERAL CLAY

KEY



MINERAL CLAY

ZEOLITE

A-54
LITHOLOGIC DESCRIPTION

Hess Rise

KK76-08-06 Sta. 14

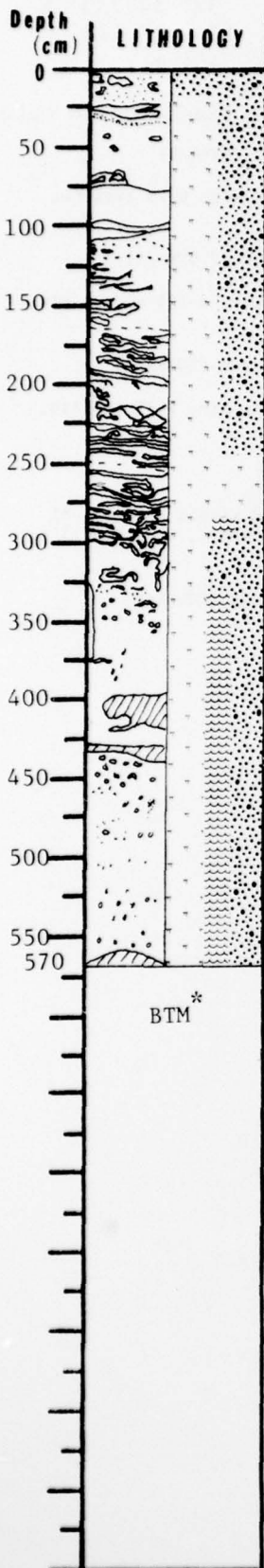
Core ID PCOD 08

Lat., Long. 33° 20.904' N

179° 32.250' W

Water Depth 4826 m

Logged By Lineberger & Mato



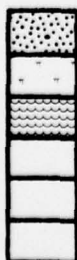
- | | |
|------------|--|
| 0-10 cm | brown (10YR5/3.5)
MINERAL CLAY
63% clay, 30% aniso min, 4% opaque min, 2% iso min |
| 10-99 cm | dark reddish brown (5YR2.5/2) to dark brown (7.5YR3.5/2)
ZEOLITE-MINERAL CLAY
40-58% clay, 20-30% aniso min, 20-30% zeolite, tr-2% opaque min, tr-1% iso min |
| 99-103 cm | brown (10YR5/3.5)
ZEOLITE RICH MINERAL CLAY
46% clay, 30% glauconite, 15% zeolite, 7% aniso min, 1% opaque min |
| 103-158 cm | light olive brown (2.5Y5/6)
CLAY RICH MINERAL ZEOLITE SAND
35-48% zeolite, 25-34% glauconite, 15-20% clay, 10% aniso min |
| 158-245 cm | strong brown (7.5YR5/8) to olive yellow (2.5Y6/8)
MINERAL RICH ZEOLITE CLAY
49-54% clay, 30% zeolite, 10-15% glauconite, 5% aniso min |
| 245-262 cm | olive yellow (5Y6/8) to (2.5Y6/8)
ZEOLITE
44% clay, 30% zeolite, 10% chertified (?) rad, 10% glauconite, 5% aniso min |
| 262-278 cm | pale olive (5Y6/4)
RAD-MINERAL-ZEOLITE RICH CLAY
30% clay, 25% zeolite, 20% glauconite, 12% chertified (?) rad, 12% non-skeletal carbonate |
| 278-328 cm | olive yellow (5Y6/6)
ZEOLITE RICH MINERAL CLAY
39% clay, 35% aniso min, 10-15% glauconite, 10-15% zeolite |
| 328-570 cm | olive yellow (5Y6/6) to pale yellow (5Y7/3)
RAD RICH ZEOLITE-CLAY MINERAL SAND
25-37% aniso min, 25-34% clay, 20-30% zeolite, 5-12% chertified (?) rad, tr-7% glauconite (?) |

Mottling

Heavy to slight mottling concentrated in central portion of core; colors range from very dusky red to yellowish brown (2.5YR2.5/2) to (5YR2.5/2) to (10YR4/3, 6/4, 5/4) through white to olive yellow (5Y8/2, 5/6) to (2.5Y6/5, 6/6).

- | | |
|------------|---|
| 101-103 cm | yellowish brown (10YR5.5/4) |
| 136-149 cm | very dusky red (2.5YR2.5/2) |
| 158-194 cm | light yellowish brown (10YR6/4)
MINERAL BEARING GLAUCONITE-ZEOLITE RICH CLAY |

KEY



MINERAL CLAY

ZEOLITE

RAD

* Late Cretaceous

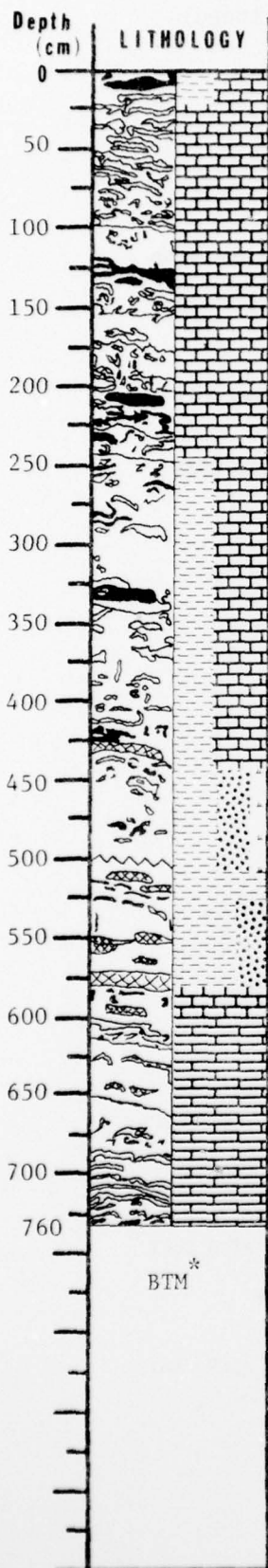
LITHOLOGIC DESCRIPTION

Hess Rise

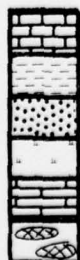
KK76-08-06 Sta. 15

Core ID PCOD 09
 Lat., Long. 34° 22.857' N
 178° 58.113' W
 Water Depth 4006 m

Logged By Lineberger & Mato



- 0-15 cm pale brown (10YR6.5/3)
CLAY RICH CALCAREOUS OOZE
36% nanno, 25% calcareous bioclastics, 20% clay, 10% foram,
5% aniso min, 1% siliceous bioclastics
- 15-245 cm pale brown (10YR6.5/3) to light gray (10YR7/2)
CALCAREOUS OOZE
35-54% nanno, 25-30% calcareous bioclastics, 12-30% forams,
1-10% clay, 2-5% aniso min
- 245-319 cm pale brown (10YR6.5/2.5)
CLAY RICH CALCAREOUS OOZE
20-30% foram, 20-30% calcareous bioclastics, 20-27% nanno,
15% clay, 3-7% aniso min, tr-10% discoaster
- 319-433 cm pale brown (10YR6/3) to light yellowish brown (10YR5.5/3.5)
CLAY RICH CALCAREOUS OOZE
15-30% discoaster, 20-20% nanno, 20-27% calcareous bioclastics,
15-25% clay, 1-6% aniso min, 1-5% foram, 0-1% zeolite
- 433-504 cm dark brown (10YR3/2.5) to (7.5YR3/2)
ZEOLITE RICH MINERAL CLAY
48-56% clay, 30-35% aniso min, 10-12% zeolite, tr-2% opaque min,
0-2% discoaster, 1% iso min, 0-1% calcareous bioclastics
- 504-515 cm light yellowish brown (10YR6/3.5)
CLAY RICH CALCAREOUS OOZE
50% nanno, 25% calcareous bioclastics, 15% clay, 5% discoaster,
2% aniso min, 2% iso min
- 515-519 cm light yellowish brown (10YR6/3.5)
CLAY
64-79% clay, 7-10% zeolite, 4-20% aniso min, 3-7% opaque min,
tr-2% iso min
- 519-575 cm dark brown (10YR4/3) to (7.5YR3/2)
MINERAL RICH CLAY
58% clay, 15% non-skeletal carbonate, 15% nanno frags, 8% nanno,
2% aniso min, 1% iso min, 1% opaque min
- 575-600 cm light yellowish brown (10YR6/4)
CALCAREOUS OOZE
67% nanno frag, 20% nanno, 10% non-skeletal carbonate, 2% aniso
min
- 600-760 cm light yellowish brown (10YR6/4) to white (N9)
NANNO OOZE
76-86% nanno, 15-20% calcareous bioclastics, 0-4% foram,
0-3% clay, 0-1% aniso min

KEY

CALCAREOUS

CLAY

MINERAL

ZEOLITE

NANNO

CHERT

*Middle Oligocene-
Eocene (?)

KK76-08-06 Sta. 15
PCOD 09
(continued)

Mottling

Slight to heavy mottling densely concentrated throughout core; colors range from white to very dark gray (10YR8/1, 7/1, 3/1, 8/2, 7/2, 6/2, 4/2, 3/2, 8/3, 7/3, 6/3, 5/3, 4/3, 3/3, 7/4, 6/4, 5/4, 4/4, 6/5) to dark brown (7.5YR3/2) to white (N8, N9).

19-20 cm	white (10YR8/2) MINERAL-CLAY FORAM BEARING CALCAREOUS BIOCLASTIC RICH NANNO OOZE
144-154 cm	very pale brown (10YR6.5/3) to pale brown (10YR5.5/3)
208-224 cm	MINERAL-CLAY BEARING FORAM-CALCAREOUS BIOCLASTIC RICH NANNO OOZE
270-290 cm	light gray (10YR6.5/1) MINERAL BEARING CLAY RICH CALCAREOUS OOZE
603-609 cm	white (10YR8/1) to brownish yellow (10YR6/5)
623-630 cm	FORAM BEARING CALCAREOUS BIOCLASTIC RICH NANNO OOZE

Layering

744-754 cm	light yellowish brown (10YR6/3.5) thinly laminate layers CALCAREOUS BIOCLASTIC RICH NANNO OOZE
0-10 cm	3 Mn nodules found; diameters of 1 cm, 3 cm, 2 cm
129-1313 cm	Mn nodule found; 2 x 3 cm
203-207 cm	2 Mn nodules found; 4 x 3 cm and .5 x .5 cm
289 cm	rock; approximately 1 cm wide
421-424 cm	large Mn nodule round; surrounding sediment composed of ZEOLITE-MINERAL BEARING DISCOASTER-NANNO-CLAY
472-473 cm	Mn nodules found
482-483 cm	
485-488	
510-514 cm	consolidated mud lump composed of NANNO-MINERAL BEARING CLAY
515-518 cm	consolidated mud lump found; approximately 4 x 4 cm
536-544 cm	consolidated mud lump found; approximately 8 cm x 3 cm x 1 cm
519-523 cm	black platy rocklike substance of MINERAL CLAY surrounding sediment composed of ZEOLITE BEARING MINERAL RICH CLAY
547-550 cm	Mn nodule encrusting consolidated mud and white substance consolidated mud composed of MINERAL BEARING CLAY white substance composed of CLAY surrounding sediment composed of ZEOLITE BEARING MINERAL RICH CLAY

KK76-08-06 Sta. 15
PCOD 09
(continued)

550-554 cm chert fragments found
564-573 cm chert fragments found; interior is very dark gray (10YR3/1)
porcelaneous exterior is white to very pale brown (10YR8/1 to 7/2)
surrounding sediment and rock are composed of ZEOLITE BEARING
MINERAL CLAY

590-593 cm chert fragments found
612-617 cm chert fragments found
620 cm chert fragments found
642-646 cm chert fragments found; dark reddish brown (5YR2.5/2)
757 cm chert fragments found
surrounding sediment composed of CALCAREOUS BIOCLASTIC RICH
NANNO OOZE

504 cm small section of sediment fell out of liner, put in bag and is not
described.

LITHOLOGIC DESCRIPTION

South of Hess Rise

KK76-08-06 Sta. 16

Core ID

PCOD 10

Lat., Long.

30° 03.067' N

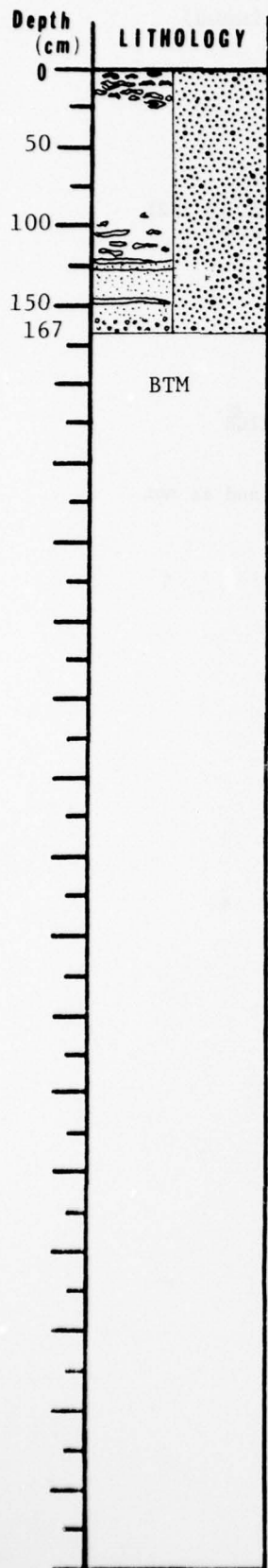
178° 45.433' E

Water Depth

4618 m

Logged By

Lineberger



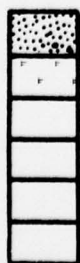
- 0-128 cm very dark gray brown (10YR3.5/2) to dark brown (7.5YR3/2)
CLAY MINERAL SAND
32-57% clay, 25-40% aniso min, 8-10% iso min, 1-10% zeolite, 1-3% opaque min
- 128-133 cm dark grayish brown (2.5Y4.5/2) to light olive brown (2.5Y5/3)
ZEOLITE RICH CLAY MINERAL SAND
32-42% clay, 20-25% aniso min, 15-30% zeolite, 15-30% iso min, 2-3% opaque min
- 133-167 cm olive (5Y4/3, 5/4)
CLAY MINERAL SAND
20-47% iso min, 15-44% aniso min, 25-30% clay, 5-7% zeolite, 3-5% opaque min

Mottling

Slight to moderate mottling scattered sparsely in middle portion of core; colors are yellowish brown (10YR5/4) to dark yellowish brown (10YR4/4).

Layering

- 133-140 cm olive (5Y3/4); lithified
ZEOLITE BEARING MINERAL RICH CLAY
- 0-2 cm small Mn nodules
- 0-20 cm small black flecks, probably Mn nodules
- 128-167 cm color and texture changes; graded from fine sand and clay to coarse pebbles, sand and clay.

KEY

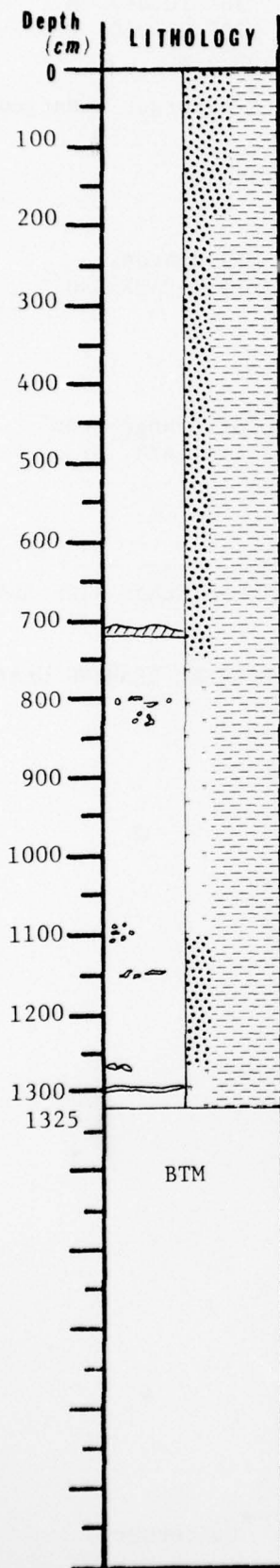
CLAY MINERAL

ZEOLITE

LITHOLOGIC DESCRIPTION

Hawaiian Ridge

Core ID KK76-08-06 Sta. 19
 PCOD 11
 Lat., Long. 26° 52.465' N
 178° 26.367' W
 Water Depth 5190 m
 Logged By Lineberger & Matsuda



- 0-165 cm brown (10YR4/3)
 MINERAL CLAY
 49-65% clay, 25-40% aniso min, 8% iso min, 2-3% opaque min,
 0-1% zeolite
- 165-748 cm dark brown (10YR3.5/3) to very dark grayish brown (10YR3/2)
 MINERAL RICH CLAY
 63-83% clay, 10-25% aniso min, 3-7% iso min, tr-10% zeolite,
 tr-3% opaque min
- 748-1100 cm very dark grayish brown (10YR3/2) to dark brown (10YR3/3)
 ZEOLITE RICH CLAY
 43-70% clay, 15-35% zeolite, 10-15% aniso min, 3-6% iso min,
 2-6% opaque min
- 1100-1270 cm brown (10YR4/3)
 MINERAL RICH CLAY
 66-74% clay, 10-15% aniso min, 8-10% zeolite, 3-8% opaque min,
 4-5% iso min
- 1270-1325 cm dark brown (10YR3/3)
 ZEOLITE RICH CLAY
 55-71% clay, 12-30% zeolite, 8-10% aniso min, 5% opaque min,
 2-5% iso min

Mottling

Slight mottling scattered sparsely in lower portion of core; brown (10YR4/3).

- 1097-1102 cm brown (10YR4/3)
 ZEOLITE BEARING MINERAL RICH CLAY
- 820-823 cm brown (10YR4/3)
 1279-1281 cm MINERAL BEARING ZEOLITE RICH CLAY
 1299-1301 cm

Layering

- 1270-1271 cm brown (10YR4/3)
 ZEOLITE-CLAY BEARING MINERAL SAND

KEY

CLAY

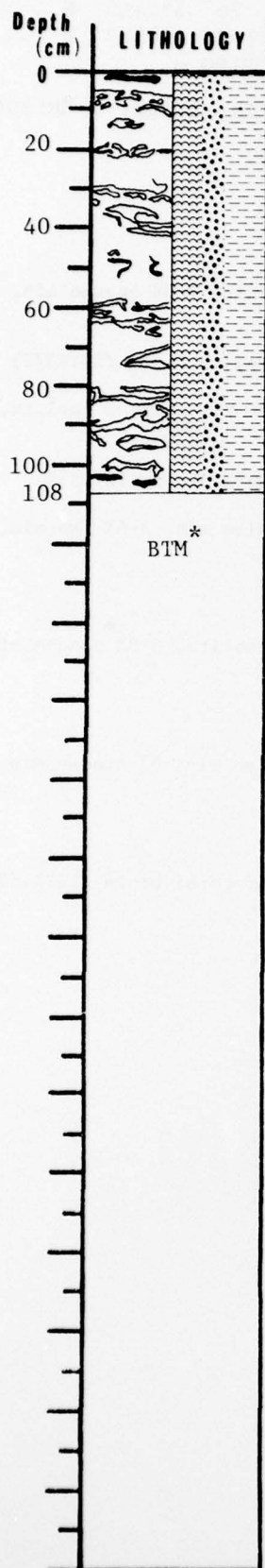
MINERAL

ZEOLITE

A-60
LITHOLOGIC DESCRIPTION

Emperor Seamounts

Core ID KK76-8-6 Sta. 29
FFC 1
Lat., Long. 36° 10.467' N
170° 01.960' E
Water Depth 5074 m
Logged By Lineberger & Matsuda



0-108 cm dark brown (10YR3/3) to light yellowish brown (10YR6/4)
DIATOM-MINERAL RICH CLAY
53-70% clay, 10-20% aniso min, 5-20% diatom, 3-7% siliceous bioclastics, tr-7% rad, 2-3% iso min, tr-1% opaque min

Mottling

Slight to moderate mottling throughout core; colors range from very dark grayish brown to pale brown (10YR5/4, 4/4, 6/3, 5/3, 3/3).

6-20 cm pale brown (10YR6/3)
49-54 cm very dark grayish brown (10YR3/2)
SILICEOUS BIOCLASTIC BEARING DIATOM-MINERAL RICH CLAY
84-93 cm brown (10YR5/3)
RAD-DIATOM-SILICEOUS BIOCLASTIC-MINERAL BEARING CLAY
0-2 cm Mn nodules found
106-108 cm Mn nodule found

KEY



CLAY
MINERAL
DIATOM
MN NODULE

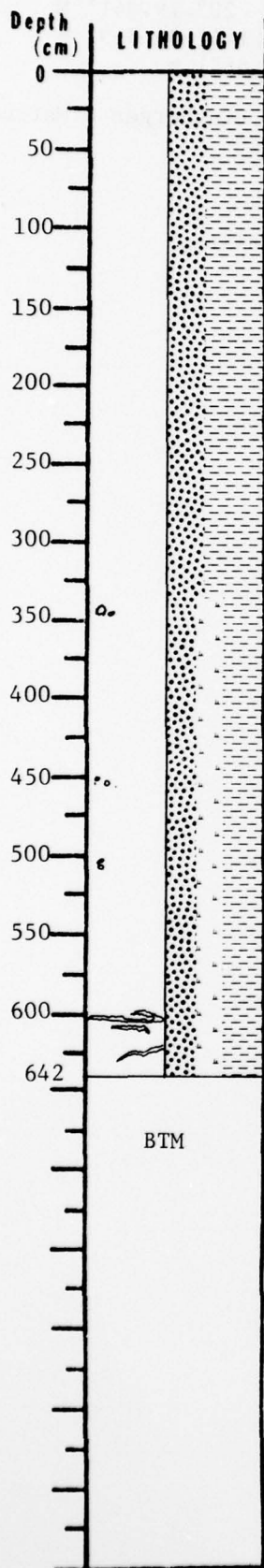
* Quaternary

A-61

LITHOLOGIC DESCRIPTION

Clarion Fracture Zone

Core ID KK76-10-10 Sta. 01
 PCOD 01
 Lat., Long. 20° 19.507' N
 144° 37.941' W
 Water Depth 5541 m
 Logged By Lineberger & Mato



0-330 cm brown (10YR4/3)
 MINERAL CLAY
 58-75% clay, 20-30% aniso min, tr-8% zeolite,
 tr-2% iso min, tr-2% opaque min, 0-2% nanno

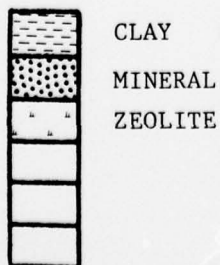
330-642 cm brown (10YR4/3)
 ZEOLITE-MINERAL RICH CLAY
 50-76% clay, 10-30% aniso min, 10-15% zeolite,
 1-6% nanno, tr-1% opaque min, tr-2% iso min

Mottling

Slight to heavy mottling scattered sparsely in lower half of core;
 colors of brown (10YR5/3) to light yellowish brown (10YR6/4).

371-372 cm brown (10YR5/3)
 NANNO-ZEOLITE-MINERAL BEARING CLAY

461-463 cm light yellowish brown (10YR6/4)
 515-516 cm NANNO BEARING MINERAL-ZEOLITE RICH CLAY
 613-615 cm

KEY

A-62

LITHOLOGIC DESCRIPTION

Clarion Fracture Zone

KK76-10-10 Sta. 01

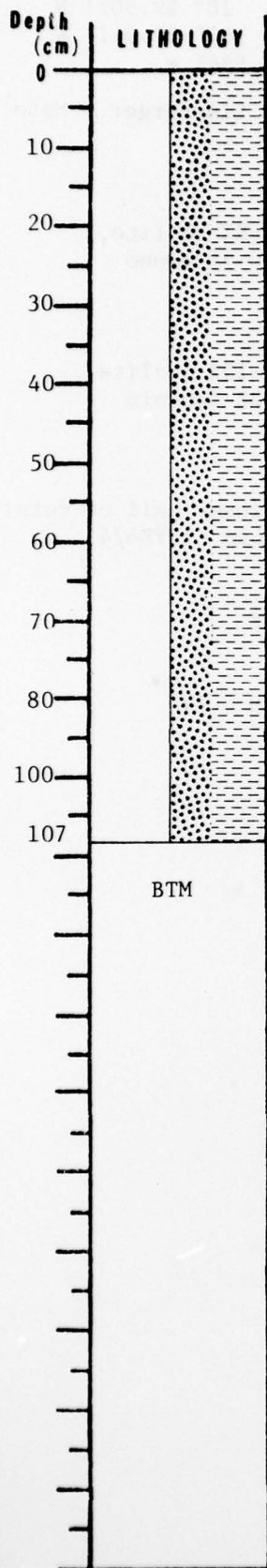
Core ID FFC 01

Lat., Long. 20° 19.341' N

Water Depth 144° 36.859' W

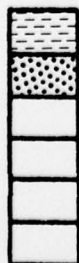
5571 m

Logged By Lineberger & Matsuda



0-107 brown (10YR4/3)
MINERAL RICH CLAY
68-82% clay, 10-20% aniso min, 5-6% zeolite,
1-3% nanno

KEY



CLAY

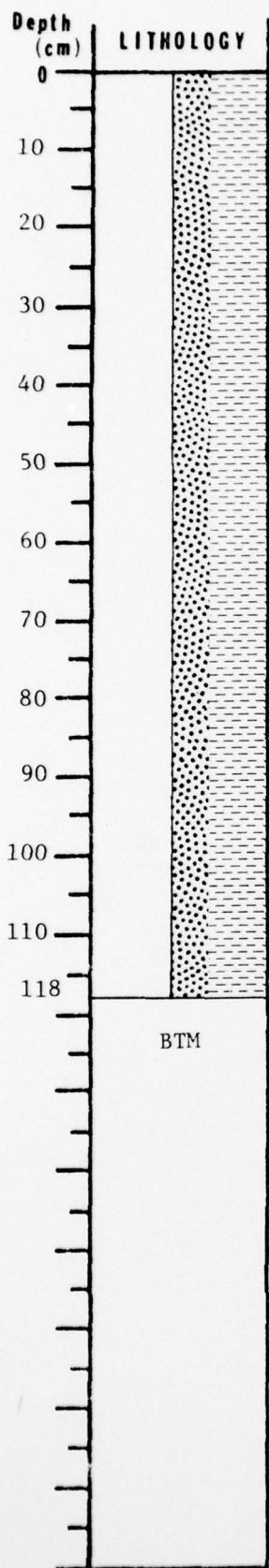
MINERAL

A-63

LITHOLOGIC DESCRIPTION

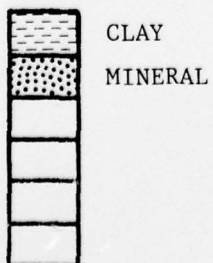
Clarion Fracture Zone

Core ID KK76-10-10 Sta. 02
 FFC 04
 Lat., Long. 20° 30.816' N
 144° 28.183' W
 Water Depth 5576 m
 Logged By Lineberger & Matsuda



0-118 cm brown (10YR4/3)
 MINERAL RICH CLAY
 81-89% clay, 7-15% aniso min, 2% zeolite,
 tr-1% opaque min

KEY



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